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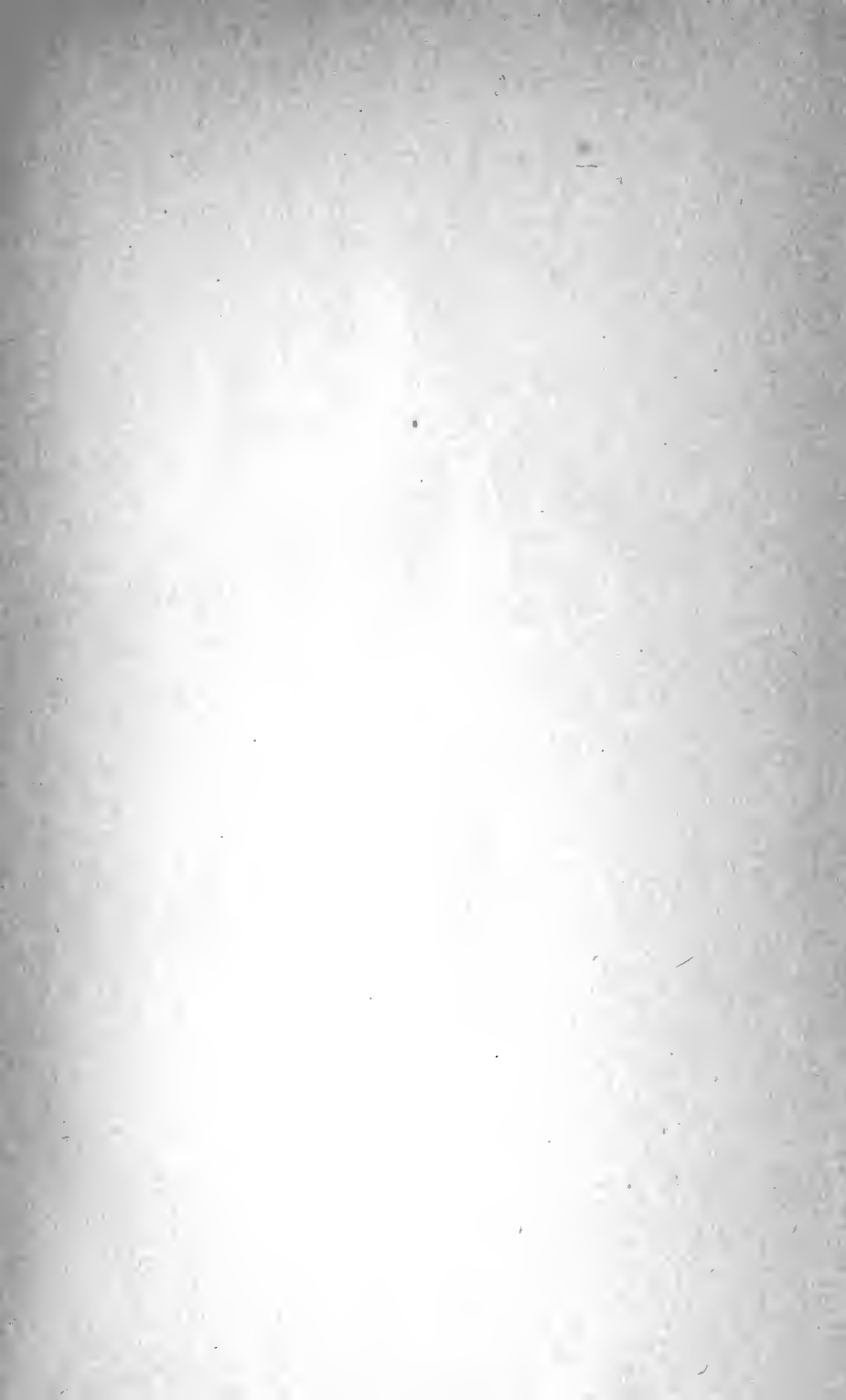
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CONTENTS

	PAGE
TRUSTEES	ix
Standing Committees	x
OFFICERS OF ADMINISTRATION	xi
REGISTRARS	xi
OFFICERS OF INSTRUCTION	I-12
GENERAL STATEMENT	13
DEPARTMENTAL STATEMENTS	14-106
Anatomy	14
Architecture	16
Astronomy	19
Biology	20
Botany	23
Chemistry	25
Microscopy and Microbiology	30
Children, Diseases of	33
Dermatology	33
Economics and Social Science	34
Sociology and Statistics	35
Engineering	36-46
Civil Engineering	36
Summer School of Surveying	39
Electrical Engineering	40
Mechanical Engineering	43
English	46-49
English Language and Literature	46
Literature	47
Rhetoric and English Composition	48
Geology	49
Summer School	51
Germanic Languages and Literature	51
Greek	53
Archæology and Epigraphy	54
Courses at the Union Theological Seminary	55
Gynecology	56
McLane Operating Theatre of the Roosevelt Hospital	57

	PAGE
History and Political Philosophy	57
Laryngology	60
Latin	61
Law	63-66
Municipal or Private Law	63
Public Law and Jurisprudence	64-66
Materia Medica and Therapeutics	66
Mathematics	67
Mechanics	70
Mineralogy and Metallurgy	72-75
Mining	75-80
Neurology	80
Obstetrics	80
Sloane Maternity Hospital	81
Ophthalmology	81
Oriental Languages	82-88
Sanskrit	82
Semitic Languages	83-87
Hebrew	84
Epigraphy	84
Arabic	85
Syriac	85
Semitic Seminar	85
Courses in Semitic Languages at the Union Theo- logical Seminary	85
Iranian Languages	87
Study of Language	88
Otology	88
Pathology, Department of	88-91
Pathology	89
Normal Histology	89
Bacteriology	90
Philosophy and Education	91-96
Physics	96
Physiology	98
Practice of Medicine	99
Romance Languages and Literature	100-104
French	101
Italian	103
Spanish	104
Surgery	105
Venereal Diseases	106
REGULATIONS FOR THE UNIVERSITY DEGREES	107-111
Master of Arts	107
Doctor of Philosophy	107
Master of Laws	110

	PAGE
SCHOOL OF ARTS	112-150
Officers and Standing Committees of the Faculty	112
The Faculty	113
Rules and Regulations for the Government of Students	114-122
Entrance Examination	114
Preliminary Examination	116
Admission of Special Students	117
Admission to Advanced Standing	117
Examinations	117
Proficiency and Deficiency	118
Honors	118
Sophomore Honors	119
Junior Honors	119
Final Honors	120
Graduation Thesis	122
Course of Study	122
Courses of Instruction	124-136
Scheme of Required Studies	137
Scheme of Elective Studies	138-139
Register of Students	140-147
Honors and Prizes, 1893	147-148
Honor Men of the Year 1893	148-150
SCHOOL OF LAW	151-166
Officers of the Faculty	151
The Faculty	151
From the Faculty of Political Science	151
Lecturers	151
Prize Lecturers	152
Purposes of the School	152
Course of Instruction	152-156
Moot Courts	156
Courses in the School of Political Science Recommended to Law Students	156
Requirements for Admission	156-158
Candidates for a Degree	156
Special Students	158
Examinations	158
Admission to the Bar	158
Register of Students	159-166
SCHOOL OF MEDICINE (College of Physicians and Surgeons)	167-200
Officers of the Faculty	167
The Faculty	167
Announcement for 1893-94	168
Vanderbilt Clinic	169
Sloane Maternity Hospital	169
Curriculum	169

	PAGE
Instruction	170-174
Lectures and Demonstrations	170
Clinics	171
Hospital Clinics	171
Practical Clinical Instruction	173
Hospital Appointments	174
Laboratory Work	174
Demonstrations of Pathological Anatomy	174
Text-Books and Instruments	175
Admission	176
Times, Places, and Subjects of Academic Examinations	177
Graduation	178
Examinations	178
Board	180
Correspondence	180
License to Practise Medicine	180
Register of Students	183-200
SCHOOL OF MINES	201-255
Officers of the Faculty	201
Standing Committees	201
The Faculty	201
Courses of Instruction	202-230
Undergraduate Courses for the Professional Degrees	202
Course in Mining Engineering	203-206
Course in Civil Engineering	207-210
Course in Electrical Engineering	211-214
Course in Metallurgy	215-218
Course in Geology and Palæontology	219-222
Course in Analytical and Applied Chemistry	223-226
Course in Architecture	227-230
By-Laws	231-238
Admission	231
Enrolment and Certificate	231
Entrance Examinations	231-234
Preliminary Examinations	234
Diplomas and Certificates in Lieu of Examination	235
Advanced Standing	235
Attendance	235
Examinations	236
Standing	237
Special Students	237
The Laboratories and Drawing Academies	237
Order	238
Excursions and Summer Schools	238
Graduate Course in Sanitary Engineering	239-241
Elective Courses Open to Seniors and Specials in the School of Arts	242

	PAGE
University Courses for the Degrees of Master of Arts and Doctor of Philosophy	242-244
Apparatus Supplies	244
Register of Students	245-255
SCHOOL OF POLITICAL SCIENCE	256-275
Officers of the Faculty	256
The Faculty	256
Purposes of the School	257
Admission	257
Candidates for a Degree	258
Courses of Instruction	258
Seminaria	258
Order of Studies	259
Admission to Other Courses	260
Register of Students	261-275
SCHOOL OF PHILOSOPHY	276-289
Officers of the Faculty	276
The Faculty	276
General Statement	277
Admission and Attendance	277
Courses of Study and Research	278
Register of Students	279-289
SCHOOL OF PURE SCIENCE	290-296
Officers of the Faculty	290
The Faculty	290
General Statement	291
Examination	291
Special Students	291
Courses of Study	292
Register of Students	293-296
THE LIBRARY	297
METHOD OF ENTERING THE COLLEGE	298
FEES	298
Free and Reduced Tuition	300
Students' Expenses	300
FELLOWSHIPS, SCHOLARSHIPS, AND OTHER PROVISION FOR THE ASSISTANCE OF STUDENTS	301-308
University Fellowships	301
University Fellowship Regulations	301
School of Arts	301-303
Alumni Scholarships	301
Society for Promoting Religion and Learning Scholarships	302
Faculty Scholarships	302
Alumni Competitive Scholarship	302
Moffat Scholarships	302
Schermerhorn Scholarships	302

	PAGE
Theological Seminary Scholarship	302
Prize of the Alumni Association	302
Two Annual Seminary Prizes	302
Chanler Historical Prize	303
School of Law	303-304
Prize Lectureships	303
Money Prizes	303
School of Medicine	304-306
Fellowships of the Alumni Association	304
Alonzo Clark Scholarship	304
Harsen Prizes for Clinical Reports	304
Harsen Prizes for Proficiency at Examination	305
Alumni Association Prize	305
Cartwright Prize of the Alumni Association	305
Stevens Triennial Prize	306
Joseph Mather Smith Prize	306
School of Mines	306-308
Tyndall Fellowship	306
Barnard Fellowship	307
Duties of Tyndall and Barnard Fellows	307
Columbia Fellowship	307
McKim Fellowships	307
School of Political Science	308
Seligman Fellowships	308
Prize in Political Economy	308
Prize Lectureships	308
Fellowship Regulations	308
Barnard Medal	308
Loubat Prize	309
PRIVILEGES OPEN TO COLUMBIA STUDENTS IN OTHER INSTITUTIONS	309
BARNARD COLLEGE	310
PUBLIC WORSHIP	310
DEGREES CONFERRED AT COMMENCEMENT, JUNE, 1893	311-315
UNIVERSITY FELLOWS 1893-94	315-316
ACADEMIC CALENDAR	317

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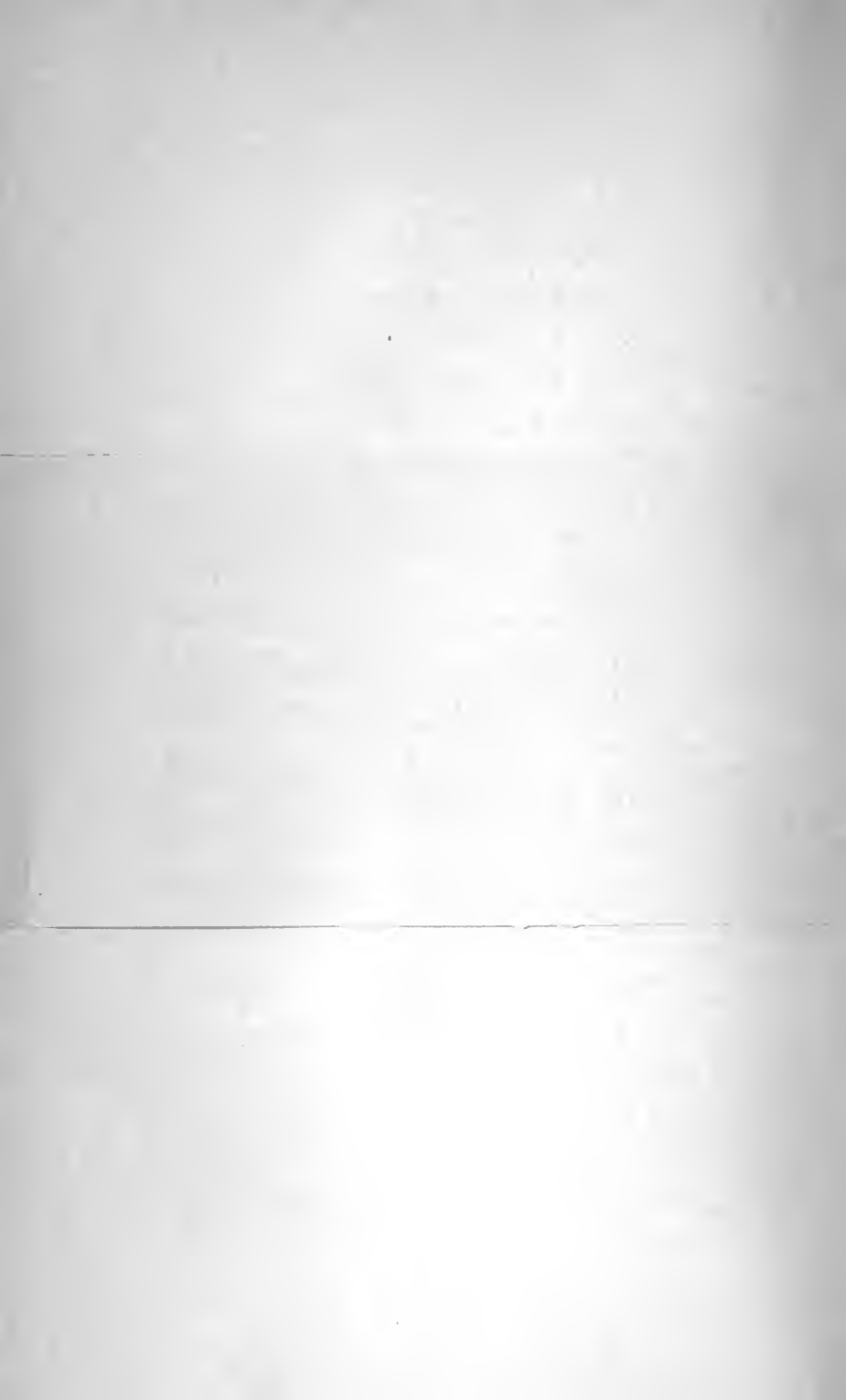
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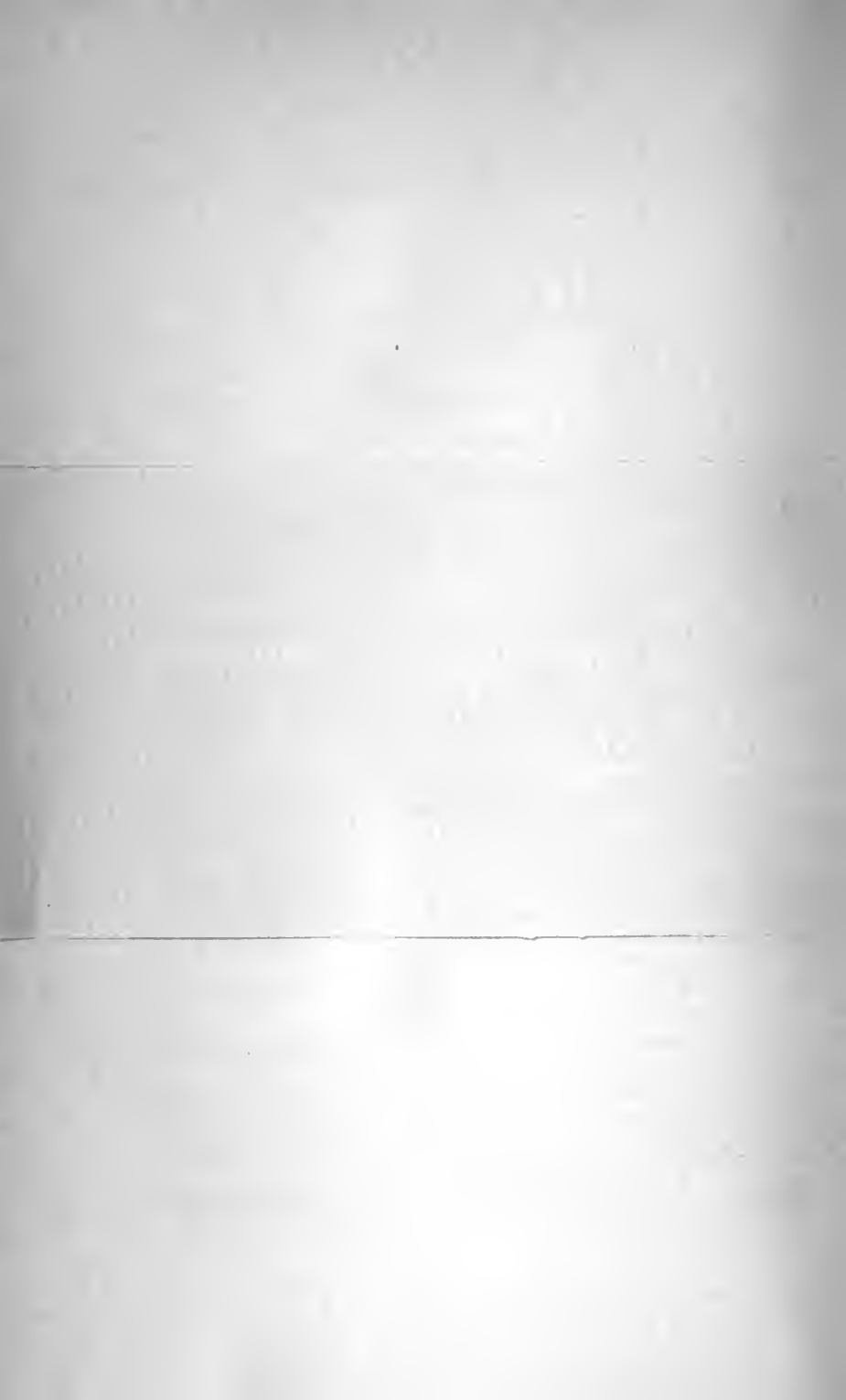
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Assistants

IRA T. VAN GIESON, M.D.....	437 West 59th Street
First Assistant in Normal Histology	
EUGENE HODENPYL, M.D.....	127 West 58th Street
Assistant in Pathology	
JOHN S. ELY, M.D.....	107 West 74th Street
Assistant in Pathology, and Curator of the Museum of Pathology	
ALEXANDER R. CUSHMAN, Ph.D.....	128 East 16th Street
Assistant in Chemistry	
DELANCEY W. WARD, Ph.B.....	Columbia College
Assistant in Chemistry	
FREDERIC T. COOPER, A.M.....	206 West 133d Street
Assistant in Latin	
ASA S. IGLEHART, A.B.....	106 East 86th Street
Assistant in Physics	
EDMUND HOWD MILLER, Ph.B.....	Columbia College
Assistant in Assaying	

- GUSTAV J. VOLCKENING, Met. E., E.M.675 Lafayette Ave., Bkln.
Assistant in Metallurgy
- HERBERT PERCY WHITLOCK, C.E.449 Park Avenue
Assistant in Mineralogy
- C. C. TROWBRIDGE.7 East 46th Street
Assistant in Physics
- HENRY S. CURTIS, A.B.Columbia College
Assistant in Physics
- STEPHEN F. WESTON, A.M.36 Lee Avenue, Brooklyn
Assistant in Political Economy and Social Science
- CARLTON C. CURTISS.1131 Dean Street, Brooklyn
Assistant in Botany
- EDWIN M. BLAKE, Ph.D.230 Washington Avenue, Brooklyn
Assistant in Mathematics
- HERBERT T. WADE, A.B.149 East 46th Street
Assistant in Physics
- LUTHER E. GREGORY, C.E.406 Passaic Avenue, Kearny, N. J.
Assistant in Mechanical Engineering
- GILBERT VAN INGEN.244 East 50th Street
Assistant in Geology
- CHARLES P. WARREN, A.M.59 West 49th Street
Assistant in Architecture
- ARNON L. SQUIERS, A.B.Columbia College
Assistant in Mathematics
- JAMES EWING, M.D.437 West 59th Street
Third Assistant in Normal Histology
- E. B. DURHAM, E.M.344 West 45th Street
Assistant in Mining
- G. R. TUSKA, C.E.1125 Madison Avenue
Assistant in Civil Engineering
- HENRY POWER, M.D.173 West 83d Street
Second Assistant in Normal Histology
- WINFIELD JOHNSON, Ph.G.437 West 59th Street
Assistant in Chemistry and Physics
- H. E. CRAMPTON, Jr.437 West 59th Street
Assistant in Biology
- CLARENCE W. VAIL, A.B.173 West 95th Street
Assistant in Rhetoric
- FRANCIS A. PROVOT, C.E.Columbia College
Assistant in Drawing
- PARKER C. MCILHINEY, Ph.B., A.M.Columbia College
Honorary Assistant in Assaying

PIERCE BAILEY, M.D.....	437 West 59th Street
Honorary Assistant in Pathology	
EDWIN M. KITCHEL, M.D.....	437 West 59th Street
Honorary Assistant in Histology	

Curators

MAXIMILIAN K. KRESS.....	Columbia College
Curator of the Architectural Collections	
REV. THOMAS MORONG, Ph.D.....	Columbia College
Curator of the Herbarium	

Lecturers

JOHN ORDRONAU, LL.D., M.D.....	58 William Street
Professor of Medical Jurisprudence	
FREDERICK W. WHITRIDGE, A.M., LL.B.....	59 Wall Street
Lecturer on the Political History of the State of New York	
A. C. BERNHEIM, LL.B., Ph.D.....	16 Broad Street
Prize Lecturer on New York State and City Politics	
FREDERIC A. BANCROFT, Ph.D.....	Columbia College
Prize Lecturer on International Public Law	
ROBERT THORNE, A.M.....	56 Wall Street
Prize Lecturer in the Law School	
R. S. ROUNDS, A.B.....	120 Broadway
Prize Lecturer in the Law School	
FRANKLIN H. GIDDINGS, A.M.....	Columbia College
Lecturer in Sociology	
FRANK MOORE COLBY, A.M.....	Columbia College
Lecturer in History.	
GEORGE RICHARDS, LL.B.....	62 Wall Street
Lecturer on Insurance	
GEORGE F. CANFIELD, LL.B.....	48 Wall Street
Lecturer on Doctrines Peculiar to the New York Law	
HENRY P. STARBUCK, LL.B.....	62 Wall Street
Lecturer on Common Law Pleading and Practice	
HERBERT GREEN, LL.B.	69 Wall Street
Lecturer on Code Pleading and Practice	
HERMAN J. SCHMITZ.....	Columbia College
Lecturer in German 1893-4	
WILLIAM Z. RIPLEY, Ph.D.....	Mass. Institute of Technology, Boston
Prize Lecturer	
CHARLES T. TERRY, A.B., LL.B.....	620 Lexington Avenue
Prize Lecturer	

OTOLOGY

WILLIAM COWEN, M.D.....	35 East 60th Street
Chief of Clinic	
ROBERT LEWIS, M.D.	W. WHITEHEAD GILFILLAN, M.D.
J. L. DE VICTORIA, M.D.	EDWARD A. KEILY, M.D.

DERMATOLOGY

GEORGE T. JACKSON, M.D.....	14 East 31st Street
Chief of Clinic	
JOHN CABOT, M.D.	CHARLES C. RANSOM, M.D.

DISEASES OF CHILDREN

FRANCIS HUBER, M.D.....	113 East Broadway
Chief of Clinic	
JOSEPH HUBER, M.D.	LOUIS M. SILVER, M.D.
FRED. S. MACHALE, M.D.	F. E. SONDERN, M.D.
	F. BIERHOFF, M.D.

GENITO-URINARY AND VENEREAL DISEASES

JAMES R. HAYDEN, M.D.....	107 West 55th Street
Chief of Clinic	
ROBERT H. GREENE, M.D.	EDMOND Y. HILL, M.D.
WILLIAM C. GILLEY, M.D.	JOHN VAN DER POEL, M.D.
	JOHN V. STEIN, M.D.

Emeritus Officers

REV. CORNELIUS R. DUFFIE, S.T.D.....	263 Lexington Avenue
Chaplain Emeritus	
THOMAS M. MARKOE, M.D.....	20 West 30th Street
Emeritus Professor of Surgery	
WILLIAM DETMOLD, M.D.....	38 East 9th Street
Emeritus Professor of Clinical and Military Surgery	
T. GAILLARD THOMAS, M.D.....	600 Madison Avenue
Emeritus Professor of Obstetrics and Gynecology	
JOHN T. METCALFE, M.D.....	149 West 57th Street
Emeritus Professor of Clinical Medicine	
EDWARD CURTIS, M.D.	120 Broadway
Emeritus Professor of Materia Medica and Therapeutics	

Other Officers

GEORGE R. VAN DEWATER, D.D.....	54 East 49th Street Chaplain 1893-4
GEORGE H. BAKER, A.M.....	Columbia College Librarian
CHARLES ALEXANDER NELSON, A.M.....	Columbia College Deputy Librarian

Columbia College in the City of New York

General Statement

COLUMBIA COLLEGE IN THE CITY OF NEW YORK is the legal designation of the institution founded in 1754 as King's College by the grant of a royal charter from George II. The title of the corporation, originally the Governors of the College of the Province of New York, is now the Trustees of Columbia College in the City of New York.

Columbia College is governed primarily by twenty-four trustees whose term of office is for life and who form a self-perpetuating body. The title to all the property of the College is vested in the trustees, who also appoint the president and all officers of instruction and administration. The trustees are the ultimate source of authority in all matters pertaining to the College.

The president has charge of the educational administration of the College, and is the chairman of the university council and of every faculty established by the trustees.

The university council is a body consisting of the president, the dean and secretary of the School of Arts, *ex officio*, and the dean and one elected member from each of the university faculties. The university council, subject to the reserved power of control by the trustees, has charge of the general educational interests of the College and of all matters affecting more than one faculty.

Columbia College is now both a college and a university. The college is known as the School of Arts. It offers a course of four years' duration in the liberal arts and sciences, leading to the degree of Bachelor of Arts, which is conferred on the recommendation of the Faculty of Arts.

The university consists of the following faculties: Law, Medicine, Mines (covering Architecture and Applied Science), Political Science, Philosophy, and Pure Science. These faculties have charge of all the graduate work, besides the professional instruction in law, medicine, and applied science. The faculties are administrative divisions of the teaching body made in accordance with the natural affiliations of the subjects taught. The schools under their charge form convenient groupings of students. Each school bears the name of its faculty, except that the school conducted by the medical faculty is known as the College of Physicians and Surgeons.

These divisions into faculties and schools neither control nor limit the student in his freedom of selecting under one or several of the faculties courses that lead to the university degrees of Master of Arts and Doctor of Philosophy. The degree of Master of Laws is also a university degree, but for this degree the choice of the student is restricted to subjects under the two faculties of Law and Political Science. All of these degrees are granted on the recommendation of the university council.

The professional degrees are Bachelor of Laws, Doctor of Medicine, Bachelor of Science, Engineer of Mines, Civil Engineer, Metallurgical Engineer, Electrical Engineer, and Sanitary Engineer. These are conferred on the recommendation of the faculties of Law, Medicine, and Mines respectively.

The degrees of Doctor of Laws, Doctor of Sacred Theology, and Doctor of Letters are conferred *honoris causa* by the trustees at their discretion.

The Library of the College contains more than 160,000 bound volumes, besides a very large number of pamphlets. More than 700 scientific and literary periodicals are regularly received by the College. The library is open fourteen hours a day for reference or for the withdrawal of books, without fee to students. About 20,000 volumes are accessible from the reading-room and may be freely consulted by readers without recourse to the librarian.

The city of New York is full of opportunities that may be availed of by advanced students. In particular, by special arrangements, peculiar privileges have been obtained for students of Columbia College, free from additional charge, in the Union Theological Seminary, the Metropolitan Museum of Art, the American Museum of Natural History, and the Teachers College.

The principal administrative officers of the College, other than the president, are the treasurer, the deans of the several faculties, the librarian, and the superintendent of buildings and grounds.

The range of instruction given in Columbia College is indicated broadly by the following departments, in connection with each of which is stated in detail the courses offered for the current academic year, together with a brief summary of the equipment of the department for the work it undertakes to do.

Following these details will be found the requirements for the university degrees, the organization of the several schools, together with the requirements for the various degrees under the control of separate schools, a statement of the method of entering the College, the cost of tuition, the endowments for the benefit of students, the special privileges open to them in affiliated institutions, and the calendar for the academic year.

ANATOMY

GEORGE SUMNER HUNTINGTON, M.D.	<i>Professor</i>
BERN BUDD GALLAUDET, M.D.	<i>Demonstrator</i>
ELLSWORTH ELIOT, Jr., M.D.	<i>Assistant Demonstrator</i>
LUCIUS WALES HOTCHKISS, M.D.	<i>Assistant Demonstrator</i>
GEORGE EMERSON BREWER, M.D.	<i>Assistant Demonstrator</i>
FREDERICK JOHN BROCKWAY, M.D.,	<i>Assistant Demonstrator and Alumni</i>
	<i>Association Fellow in Anatomy</i>
JOSEPH A. BLAKE, M.D.	<i>Assistant Demonstrator</i>
ROBERT ALFRED SANDS, M.D.	<i>Assistant Demonstrator</i>

Courses

I (A)—GENERAL INTRODUCTION TO VERTEBRATE MORPHOLOGY—Development of vertebrate type—Anatomy of the locomotory apparatus, osteology,

syndesmology, and myology—Peripheral vascular and nervous systems—Regional anatomy of the head and neck

I (B)—GENERAL INTRODUCTION TO VERTEBRATE MORPHOLOGY—Anatomy of the body cavities—Visceral and topographical course—Thorax and abdomen

I (A) and I (B) are given in alternate years

Lectures 3 hours a week throughout the academic year. Professor HUNTINGTON

Required, in the first and second years, of candidates for the degree of M.D. Elective, in conjunction with II and IV, for seniors in the School of Arts.

II—DEMONSTRATIONS TO SECTIONS OF THE CLASS—Cranial osteology and syndesmology—Osteology, myology, and angiology of the distal portions of the extremities. One hour a week for half of the academic year; 2 hours a week for the other half. Dr. SANDS

Required, in the first year, of candidates for the degree of M.D. Elective, in conjunction with I and IV, for seniors in the School of Arts.

III—DEMONSTRATIONS TO SECTIONS OF THE CLASS—Anatomy of the mouth, pharynx, and larynx—The auditory apparatus—The central nervous system. One hour a week throughout the academic year. Dr. GALLAUDET

Required, in the second year, of candidates for the degree of M.D.

IV—LABORATORY COURSE—Dissection of the human body. Eighteen to twenty hours a week for from thirteen to twenty-one weeks. Professor HUNTINGTON, Dr. GALLAUDET, and staff of Assistant Demonstrators

Required, in the first year, of candidates for the degree of M.D. Elective, in conjunction with I and II, for seniors in the School of Arts.

V—LABORATORY COURSE—Dissection of the human body. Ten to twelve hours a week for from six to eleven weeks. Professor HUNTINGTON, Dr. GALLAUDET, and staff of Assistant Demonstrators

Required, in the second year, of candidates for the degree of M.D.

VI—LABORATORY COURSES IN ANIMAL MORPHOLOGY—No specified number of hours a week. * Professor HUNTINGTON

Optional, for qualified candidates for the degree of M.D. Open as major or minor courses to candidates for the degree of A.M. or of Ph.D.

VII—THE LABORATORY OF ANIMAL MORPHOLOGY is open for research, under the direction of the professor, to advanced workers. No definite number of hours a week. Professor HUNTINGTON

Fellowships

For the University and Alumni Association Fellowships, open to persons desiring to do special work under the Professor of Anatomy, see table of contents.

Equipment

The laboratory facilities of the Department of Anatomy are very complete. The large general dissecting room accommodates from 220 to 294 students at a time, working in groups of five or seven, respectively, at one table.

The recently completed erection of a plant for the production of artificial cold by the anhydrous ammonia process has enabled the department, through the means offered for the indefinite preservation of fresh subjects by the cold storage system, greatly to increase the amount of material available for laboratory work; and has also rendered it possible so to regulate the temperature of the general laboratory, that the work can be carried on without difficulty during the warmer months at the beginning and close of the academic year.

During the past year the laboratory for advanced morphological research has been completed, equipped with apparatus, and provided with steam power and plant, electricity, and ammonia freezing and corrosion plants.

Every facility for advanced and research work in morphology is here extended. The established connections of the department furnish abundant human and comparative material, both mature and embryonal. During the eight months since the completion of the laboratory advanced work has been done by three graduates, and four students, in medicine. The private library of the Professor of Anatomy is at the disposal of such workers.

Much work has been done in the formation of a Museum of Human and Comparative Anatomy, the ultimate design of which is to present, in as complete a manner as possible, a view of the evolution of the forms of animal life, and of their natural relations, both in series of natural groups in individual species in relation to the remaining members of such groups, and in the comparative and relative position of organs and systems. Even the approximate attainment of this aim will require much time and work. For the present, the energies of the Department are directed toward placing in position the very abundant vertebrate material already on hand, and the collection of models and casts pertaining chiefly to human anatomy. It is hoped that sufficient progress in these directions will be made before long to justify the opening of the museum. The collection, both as regards groups and the individual preparations, is designed for the illustration of both elementary and advanced courses.

In addition to the museum collection proper the department is constantly adding to a large collection for advanced study and research.

A study collection of human osteological preparations is so administered as to enable every student to take out the different osteological series and retain them for private study as long as required.

ARCHITECTURE

WILLIAM R. WARE, B.S.	<i>Professor</i>
ALFRED D. F. HAMLIN, A.M.	<i>Adjunct Professor</i>
FRANK DEMPSTER SHERMAN, PH.B.	<i>Adjunct Professor</i>
GRENVILLE TEMPLE SNELLING, B.S.	<i>Instructor</i>
MAXIMILIAN K. KRESS.	<i>Curator of the Architectural Collections</i>
CHARLES A. HARRIMAN.	<i>Instructor</i>
CHARLES P. WARREN, A.M.	<i>Assistant</i>

Courses

I—ANCIENT ARCHITECTURAL HISTORY. 2 hours a week, first year. Text-book: Reber's History of Ancient Art. Mr. KRESS

II—MEDIÆVAL ARCHITECTURAL HISTORY—Byzantine, Romanesque, Gothic. 2 hours a week, first term. 2 hours reports and criticisms, and 12 hours original research in library and drawing-room, second term. Exercises in historical design. See XV. Every other year to second and third classes together (alternating with III). Professor WARE

III—MODERN ARCHITECTURAL HISTORY—The Renaissance—modern revivals—American architecture. 2 hours a week, first term, with reading of French text-book. 2 hours reports and criticisms, and 12 hours research in library and drawing-room, second term. Exercises in historical design. See XV. Text-book: Palustre, *L'Architecture de la Renaissance*. Every other year to second and third classes together (alternating with II). Professor HAMLIN

IV—THE THEORY OF ARCHITECTURE—The theory of form, proportion, symbolism, the decorative arts, stained glass, mosaic, fresco. The theory of color, harmony of color, composition and style. 1 hour a week, second and third years. Professor WARE

V—HISTORY OF ANCIENT ORNAMENT—The decorative forms of Egyptian, Assyrian, Greek, and Roman art. 1 hour a week, first year. Professor HAMLIN

VI—HISTORY OF MEDIÆVAL ORNAMENT—Early Christian, Byzantine, and Gothic ornament. 1 hour a week (alternating with VII), every other year to second and third classes together. Professor HAMLIN

VII—HISTORY OF MODERN ORNAMENT—Renaissance, Oriental, and Modern ornament. 1 hour a week (alternating with VI), every other year to second and third classes together. Professor HAMLIN

VIII—THE ELEMENTS OF ARCHITECTURE—Mouldings, the orders, pedestals, pilasters, pediments, intercolumniation, superposition, balusters and balustrades, arches and arcades, impostes, doors, windows, roofs, spires, steps, stairs, vaults, domes. Eighteen plates required. 2 hours a week, second term of first year. Professor SHERMAN

IX—DRAWING

Fifteen hours a week during about half the year

A Architectural drawing, with brush, pencil, and pen; first year

B Historical drawing, in connection with lectures on architectural history; first, second, and third years

C Freehand drawing. Sketching, drawings from the cast and from photographs of ornament, architectural detail, and the human figure; first, second, third, and fourth years. Professor WARE, Professor HAMLIN, Mr. KRESS, Mr. HARRIMAN, and Mr. WARREN

X—PROJECTIONS, INTERSECTIONS, AND SHADES AND SHADOWS—1 hour a week, first year. Twenty plates required. Professor SHERMAN

XI—PERSPECTIVE—Twelve lectures, second year. Eight plates required. Professor WARE

XII—DESCRIPTIVE GEOMETRY, STONE-CUTTING, AND TRAINING—2 hours a week, fourth year. Twenty plates required. Professor SHERMAN

XIII—PRACTICE, SPECIFICATIONS

- 1st, Masonry—stonework, brickwork, stone-work plastering
- 2d, Woodwork—carpentry, joinery, plumbing, hardware, painting, glazing, roofing
- 3d, Ironwork—steel and iron construction, processes of manufacture, joints, framing, and bracing

The class copy a model specification and are examined upon the lectures. 1 hour, first, second, third, and fourth years. Professor WARE, Mr. WARREN

XIV—ARCHITECTURAL ENGINEERING—Analytical mechanics—statics, elementary dynamics. Applied mechanics—foundations, retaining walls, walls, pillars, beams, trusses, arches, vaults, and domes. Text-book: Lanza's Applied Mechanics. 2 hours a week, second and third years. Professor SHERMAN and Mr. SNELLING

XV—ARCHITECTURAL DESIGN—15 hours a week, second term of first year, first term of the second and third years, and during both terms of the fourth year. Problems in design: plans, elevations, sections, and details. Professors WARE, HAMLIN, and SHERMAN, and Mr. SNELLING

In the second year the problems involve special drill in the use of the orders; in the third and fourth years in planning and composition.

In the second and third years the afternoons of the second term are mainly occupied by historical study; but there are also a limited number of problems in historical design—see II and III.

XVI—ARCHÆOLOGY—2 hours a week, second year, in French. Text-book: Collignon, Manuel d'Archéologie Grecque. 2 hours a week, third year, in German. Text-book: Kroker, Katechismus der Archäologie. Mr. KRESS

XVII—ADVANCED ARCHITECTURAL HISTORY—2 hours a week, fourth year; reading and writing on special topics with illustrative drawings. Professor WARE

XVIII—ADVANCED ARCHITECTURAL DESIGN—Advanced problems in planning and composition. 20 hours a week, fourth year. Professor HAMLIN

XIX—ADVANCED ARCHITECTURAL ENGINEERING—Practical examples in applied mechanics, treated both graphically and analytically. Problems in constructive design. 3 hours a week, lectures, fifteen hours practice, fourth year. Mr. SNELLING

XX—ADVANCED PRACTICE—The study of building processes. 2 hours a week, fourth year. Mr. WARREN

XXI—UNIVERSITY COURSE IN HISTORY AND DESIGN

XXII—UNIVERSITY COURSE IN CONSTRUCTION AND PRACTICE

These two university courses are identical with the fourth-year elective courses; XVII, XVIII, XIX, and XX. They are open to graduates of colleges and scientific schools who are qualified to take them, and to experienced draughtsmen.

Students are received for periods of two months at a time.

Equipment

About 15,000 photographs, about 900 books, a classified library of prints and plates, the Avery Architectural Library of about 10,000 volumes, a collection of MS. drawings from the École des Beaux-Arts, the Willard collection of architectural casts at the Metropolitan Museum, a collection of casts of architectural details from ancient and modern Roman buildings, a collection of building-stones, tools, and materials, and about 5000 lantern slides of architectural subjects.

ASTRONOMY

JOHN KROM REES, A.M., E.M.....	<i>Professor</i>
HAROLD JACOBY, A.B.....	<i>Instructor</i>
JOSEPH THOMPSON MONELL, C.E., E.E.....	<i>Tutor</i>

General Statement

Course III is required of students in the School of Mines in the course of Civil Engineering, between their third and fourth years.

Course I is elective for Juniors and Seniors in the School of Arts ; Courses II and III for Seniors in the same school ; and Courses IV, V, and VI for university students and candidates for the A.M. and Ph.D. degrees.

Courses

I—GENERAL ASTRONOMY—This course is historical and descriptive, and is supplemented by visits to the Observatory, where students are taught to locate the principal constellations and are afforded opportunities to view the sun, moon, planets, nebulae, and stars. Reference books : Young's General Astronomy, Grant's History of Physical Astronomy, Clerke's History of Astronomy during XIX Century, and Clerke's System of the Stars. 2 hours. Professor REES, assisted in the Observatory by Mr. MONELL

II—SPHERICAL AND PRACTICAL ASTRONOMY—This course consists mainly of the study and use of the sextant for time and latitude determinations, and of the transit instrument for time. Reference book : Hand-book of Practical Astronomy by W. W. Campbell. 2 hours lectures and 2 hours observatory work. Professor REES and Mr. MONELL

III—GEODESY—This course deals with the subjects named in the scheme of the Summer School in Geodesy. During the vacation between the first and second years of this course, the students are required to attend the summer school for six weeks to learn the use of apparatus, as indicated by the following :

- (1) Use of the nautical almanac and American ephemeris
- (2) Sextant observations for time and latitude
- (3) Transit instrument for time
- (4) Base line measurements
- (5) Angle measurements by "directions"
- (6) Determination of the azimuth of a line
- (7) Barometric Hypsometry

Reference books: Campbell's Practical Astronomy, Clark's Geodesy, United States Coast Survey Reports, and Jordan's Handbuch der Vermessungskunde. 2 hours lectures first year and first term of the second year. Professor REES, Mr. JACOBY, and Mr. MONELL

IV—ADVANCED SPHERICAL AND PRACTICAL ASTRONOMY—This course deals with the subjects of time, latitude, and longitude; use of equatorial and of zenith telescopes. Reference books: Chauvenet's (two vols.) Spherical and Practical Astronomy, and Doolittle's Practical Astronomy. 2 hours lectures and 4 hours observatory work for two years. Professor REES and Mr. JACOBY

V—THEORETICAL ASTRONOMY—This course deals mainly with the theory of comet orbits and their calculation. Reference books: Klinkerfues' Theoretische Astronomie and Oppolzer's Bahnbestimmung. 1 hour, supplemented by computations, for two years. Mr. JACOBY

VI—THEORY AND METHODS OF REDUCTION OF PHOTOGRAPHIC STAR PLATES—This course deals with the determination of star places from the photographic plates, and includes the subjects of stellar parallax and proper motion. 1 hour, with practical work, for two years. Mr. JACOBY

Equipment

The apparatus of the department consists principally of the following:

- (1) The Rutherford equatorial of 13 inches aperture with a correcting lens for photography
- (2) Three transit instruments
- (3) Two fine clocks and several chronometers
- (4) Three chronographs
- (5) Zenith telescope by Wanschaff of Berlin
- (6) Measuring machines for photographs by Rutherford and Repsold
- (7) Personal equation machine
- (8) Base measuring apparatus
- (9) Theodolites with micrometer microscopes reading to a second of arc

The library is well supplied with the books relating to the works of the department, having lately purchased the Struve collection of astronomical publications.

BIOLOGY

HENRY FAIRFIELD OSBORN, Sc.D.	<i>Professor</i>
EDMUND B. WILSON, Ph.D.	<i>Adjunct Professor</i>
BASHFORD DEAN, Ph.D.	<i>Instructor</i>
ARTHUR WILLEY, B.Sc.	<i>Tutor</i>
HENRY E. CRAMPTON, Jr., A.B.	<i>Assistant</i>

General Statement

The courses in this department are all elective. They consist of lectures followed by from 4 to 8 hours of practical work in the laboratory, and are arranged consecutively, advancing from instruction belonging properly to a

liberal education up to the highest specialization. First : The elementary Courses I and II are designed for general training in the principles of animal biology, as part of the general education of scientific and academic students. Second : The Courses III and IV follow, and are of a slightly more special character, being arranged for students preparing for geology, medicine, advanced biology, and psychology. Third : The earlier University Courses V, VI, and VII are arranged as minor courses for students of palæontology, botany, and physiology, and as first-year courses for students of advanced biology. Fourth : The more special University Courses IV, VIII, IX, X, and XI are designed for the higher and research training of advanced university students.

In addition to the regular instruction of the department a series of general lectures upon contemporary questions in biology are given by invited lecturers and by different members of the biological staff of the university. They cover certain subjects which are not systematically treated in the current collegiate and university courses. The subjects for 1893-94 are : Contemporary Problems in Evolution and Heredity, by Professor Osborn ; The Coloring of Animals, by Professor Poulton (of Oxford University) ; Comparative Physiology of the Nervous System, by Dr. F. S. Lee (of the Department of Physiology).

Courses in Animal Biology

I—ELEMENTARY ZOÖLOGY—Introductory to biology, palæontology, geology. Descriptive of the various orders of animals. Lectures and demonstrations. Packard's Elements of Zoölogy. 1 hour a week. Dr. DEAN

Open to second-year students, School of Mines.

II—ELEMENTARY BIOLOGY—Introductory to morphology, physiology, and general biology. A general course upon lower and higher organisms. Lectures and laboratory work. Huxley and Martin—Practical Biology. 2 afternoons (4 hours) a week. Professor WILSON, Professor OSBORN

Elective to Juniors, School of Arts.

III—GENERAL ZOÖLOGY—More advanced treatment of subjects under Course II. Preparatory to biology and medicine. Lectures and laboratory work. Parker's Elementary Biology ; Wiedersheim's Comparative Anatomy ; Foster and Balfour's Elements of Embryology. 2 afternoons (4 hours) a week. Professor OSBORN, Professor WILSON

Open to Seniors, School of Arts.

IV—COMPARATIVE NEUROLOGY—An introduction to the comparative structure of the brain and nervous system of the lower and higher animals. Lectures and laboratory work. Edinger's Lectures upon the Nervous System. Also Obersteiner, Romanes, Retzius. 1 afternoon (3 hours) a week. Professor OSBORN

Open to Seniors and Graduates.

V—COMPARATIVE MORPHOLOGY—Anatomy and organogeny of vertebrates and invertebrates with reference to evolution and classification. Lectures and laboratory work. Wiedersheim's Grundriss der Vergleichenden Anatomie ;

Claus's Zoölogy ; Lang's Comparative Anatomy. 6 hours (1 day) a week. Professor OSBORN, Professor WILSON

Required of candidates for Ph.D. whose major subject is biology, first year.

VI—COMPARATIVE EMBRYOLOGY—A general treatment of the development of organisms. Lecture and laboratory course in 1893-94 and 1895-96. Korschelt and Heider ; Marshall's Embryology ; Hertwig ; Balfour. 6 hours (1 day) a week. Professor WILSON

Open to graduates ; alternating with Course VII. Required of candidates for Ph.D., first year.

VII—CELLULAR BIOLOGY—General structure and functions of the cell. Lecture and laboratory course in 1894-95. Alternating with Course VI. Hertwig's Zelle und Gewebe. 6 hours (1 day) a week. Professor WILSON

VIII—MORPHOLOGY OF THE MAMMALS—A study of the structure and development of fossils and recent mammals. Lecture and laboratory courses. Flower's Osteology ; Flower and Lydekker ; and Zittel's Palæontologie. 6 hours (1 day) a week. Professor OSBORN

Open to graduates.

IX—MORPHOLOGY OF THE FISHES—The comparative anatomy of the fishes recent and fossil. Laboratory course in first term ; lecture and laboratory course in second term. Smith Woodward's Catalogue of Fossil Fishes. 6 hours (1 day) a week. Dr. DEAN

Open to School of Mines students, Juniors and Seniors in certain courses, and graduates.

X—SPECIAL MORPHOLOGY—Subject in 1893-94 : Structure and Interrelationships of the Proto Chordata. The subject of this course varies in each year. 1 lecture a week, second term. Mr. WILLEY.

Open to graduates.

XI—ADVANCED BIOLOGY—The study of special groups of animals or of special biological problems, as an introduction to original investigation. 12 hours (2 days) a week

Open to graduates, second or third year.

The announcement of additional courses for 1894-95 will be made later in a special circular.

Equipment

Pending the construction of the permanent biological laboratory on the new university site, a thoroughly equipped laboratory has been arranged on the third floor of the northern wing of the College of Physicians and Surgeons (West 59th Street), including general and advanced laboratories, museum, aquaria, lecture-room, library, and reading-room. The equipment includes the best Zeiss microscopes, the higher apochromatic objectives, optical instruments, Leitz dissecting stands, and other apparatus for advanced morphological work. The teaching collections include a large series of the Naples marine types, a full set of standard and specially prepared charts, and a variety of living animals and plants contained in fresh water and marine aquaria.

The departmental library, a part of the university library kept in the laboratory, the gift of Charles H. Senff, is a memorial to the late Dr. Northrop,

and embraces full sets of the standard biological works, including the journals and a rapidly increasing collection of memoirs and special monographs. A fund is available for the purchase of literature needed in connection with the special researches of students. Forty-three of the current biological journals are subscribed for. One of the special features of the department is the Morphological Club, open to instructors and all advanced students of biology, and meeting every two weeks in the library to report upon special investigations and to present abstracts of special articles. The more important papers published from the laboratory are collected and reissued in *Studies from the Biological Laboratories of Columbia College*. Another feature in advanced instruction is connected with the biological section of the New York Academy of Sciences, which affords opportunities for the public reading, discussion, and printing of scientific papers.

The summer study of marine zoölogy is provided for in the connection of the department with the Marine Biological Laboratory at Wood's Holl, Mass., including subscription for an investigator's room ; also in special expeditions to various localities along the coast. The western palæontological expeditions conducted by the American Museum of Natural History are open to certain advanced students of vertebrate morphology.

BOTANY

NATHANIEL LORD BRITTON, E.M., Ph.D.....	<i>Professor</i>
CARLTON C. CURTISS, Ph.D.....	<i>Assistant</i>
THOMAS MORONG, A.M., Ph.D.....	<i>Curator</i>

General Statement

Of the courses offered by the department, Course III is required of first-year students in the School of Mines in the courses in Chemistry, Mining Engineering, and Geology ; Course IV of second-year students in the same school in the course in Geology ; Course V of third-year students in the same course ; and Course VI of fourth-year students in the same course.

Courses I and II are elective for Juniors and Seniors in the School of Arts ; Courses IV, V, and VI for Seniors in the same school ; and Course III for Seniors who have not taken I or II

Courses VII to XIII are primarily for graduates

I—ELEMENTARY BOTANY, LONGER COURSE—Study of botany in its broadest sense, including introduction, vegetable anatomy, vegetable physiology, systematic botany in the biological sequence of the groups, morphology of the flowering plants, and a review of palæobotany. Text-book : Bastin's College Botany. 1 hour lecture and 4 hours (2 afternoons) laboratory work. Professor BRITTON and Dr. CURTISS

II—ELEMENTARY BOTANY, SHORTER COURSE—Same as Course I. Text-book : Bastin's College Botany. 1 hour lecture and 2 hours (1 afternoon) laboratory work. Professor BRITTON and Dr. CURTISS

III—GENERAL BOTANY—Description of the principal features of vegetable physiology and anatomy, and of the principal characteristics of the sub-kingdoms and classes. Text-book: Bastin's College Botany. 1 hour. Professor BRITTON

IV—VEGETABLE ANATOMY—Study of the principal characteristics of vegetable cells and tissues. Text-book: Goodale's Physiological Botany. Pre-requisite: Courses I or II, or their equivalent. 2 hours laboratory work. Dr. CURTISS

V—MORPHOLOGY AND DETERMINATION OF THE FLOWERING PLANTS—Dissection and examination of not less than one hundred species of flowering plants selected by the professor, followed by a systematic study of types of the natural orders taken in biological sequence. Text-books: Gray's Structural Botany and Manual of Botany. Pre-requisite: Courses I or II, or their equivalent. 4 hours laboratory work. Professor BRITTON

VI—ECONOMIC BOTANY—Description of drug-plants, food-plants, fibre-plants, and timber-trees, and other plants of economic importance and their products. Pre-requisite: Courses I, II, or III, or their equivalent. 1 hour. Professor BRITTON

VII—CRYPTOGAMIC BOTANY—Description of the classes and principal orders of Protophyta, Thallophyta, Bryophyta, and Pteridophyta, with examination of types selected by the professor. Text-book: Bennett and Murray's Cryptogamic Botany. Pre-requisite: Courses I, II, or their equivalent. 1 hour lecture or conference and 4 hours laboratory work. Offered as a minor for the degree of A.M. Professor BRITTON and Dr. CURTISS

VIII—ADVANCED VEGETABLE ANATOMY—Critical study of the cells and tissues of some plant or plants selected. Text-book: De Bary's Comparative Anatomy of Phanerogams and Ferns. Pre-requisite: Course IV or its equivalent. At least 4 hours laboratory work. Offered as a minor for the degree of A.M. Dr. CURTISS

IX—THE NATURAL ORDERS OF FLOWERING PLANTS—Study of the diagnostic characters of the orders in biological sequence. Reference books: Engler and Prantl's *Natürliche Pflanzenfamilien* and Baillon's *Histoire des Plantes*. Pre-requisite: Course V. 1 hour conference and 4 hours laboratory work. Offered as a major for the degree of A.M. Professor BRITTON

X—ADVANCED CRYPTOGRAMIC BOTANY—Supplementary to Course VII. 1 hour lecture or conference and 4 hours laboratory work. Offered as a major for the degree of A.M. Professor BRITTON and Dr. CURTISS

XI—COMPARATIVE STUDY OF THE TISSUES OF NOT LESS THAN TEN SPECIES OF PLANTS OF THE SAME GENUS OR ORDER—Not less than 8 hours laboratory work. Research. Offered as a major for the degree of Ph.D. Professor BRITTON and Dr. CURTISS

XII—COLLECTION, DETERMINATION, AND COMPARATIVE STUDY OF THE PLANTS OF SOME RESTRICTED AREA—Field, herbarium, and laboratory work. Not less than 8 hours for two years; field work during two summers. Research. Offered as a major for the degree of Ph.D. Professor BRITTON

XIII—CRITICAL STUDY OF AN ORDER OR GENUS OF PLANTS OF NOT LESS THAN FIFTY SPECIES—Field, herbarium, and laboratory work. Not less than 8 hours for two years. Research. Offered as a major for the degree of Ph.D. Professor BRITTON

NOTE—Any two of Courses VII, VIII, IX, or X may be taken as a minor for the degree of Ph.D.

Equipment

The botanical laboratory is situated on the upper floor of the School of Mines laboratory building. It is fitted up with tables and cases, and is equipped with compound and dissecting microscopes and accessories and other apparatus for study and investigation. There is a large collection of microscopic preparations. The courses of instruction are illustrated by extensive series of models, charts, and lantern slides.

The herbarium contains about 500,000 specimens, being one of the largest in America; additions are at present made to it at the rate of about 20,000 specimens a year. It comprises: (1) The collections accumulated by Dr. Torrey, which came into the possession of the college at his death in 1873. (2) The collections of Professor C. F. Meisner of Basle, Switzerland, presented to the college about the time of Dr. Torrey's death by Mr. John J. Croke. (3) The collections of Dr. A. W. Chapman of Appalachicola, Florida, presented by Mr. Croke at the same time, containing the types illustrating Dr. Chapman's Flora of the southern United States. (4) The mosses of the late C. F. Austin. (5) The mosses of the late Dr. J. G. Jaeger, recently acquired. (6) Miscellaneous accumulations since Dr. Torrey's death, now making up more than one third of the whole collection. The herbarium is rich in types of species described by Dr. Torrey, Professor Meisner, Dr. Chapman, Dr. Asa Gray, Mr. Austin, Professor Britton, and Dr. Morong. The various collections are now all arranged in a single series, but each sheet is identified by a designative label or stamp. There are also extensive collections of fruits, seeds, woods, and material illustrating economic botany, placed in cases and drawers.

The portion of the college library classified under botany is shelved in the room containing the herbarium. It now contains 3400 bound volumes and about 5000 pamphlets and extracts. These numbers do not, however, represent the whole reference strength of the collection, for all general works, scientific journals, and publications of general scientific societies are shelved in the main library. All the regularly published journals devoted to botany are received, and the sets of most of them are complete.

CHEMISTRY

(Including Microscopy and Microbiology)

CHARLES F. CHANDLER, Ph.D., M.D., LL.D	<i>Professor</i>
PIERRE DE PEYSTER RICKETTS, E.M., Ph.D.	<i>Professor</i>
CHARLES E. COLBY, E.M., C.E.	<i>Adjunct Professor</i>
CHARLES ERNEST PELLEW, E.M.	<i>Demonstrator</i>
JOSEPH ALBERT DEGHUÉE, Ph.D.	<i>Assistant Demonstrator</i>
JAMES S. C. WELLS, Ph.D.	<i>Instructor</i>

ALEXIS A. JULIEN, A.M., Ph.D.....	<i>Instructor</i>
FERDINAND G. WIECHMANN, Ph.D.....	<i>Instructor</i>
LOUIS H. LAUDY, Ph.D.....	<i>Tutor</i>
HENRY C. BOWEN.....	<i>Tutor</i>
HERMANN T. VULTÉ, Ph.D.....	<i>Tutor</i>
ALEXANDER R. CUSHMAN, Ph.D.....	<i>Assistant</i>
DELANCEY WALTON WARD, Ph.B.....	<i>Assistant</i>
EDMUND H. MILLER, Ph.B., A.M.....	<i>Assistant</i>
WINFIELD JOHNSON, Ph. G.....	<i>Assistant</i>
PARKER C. MCILHINEY, Ph.B., A.M.....	<i>Honorary Assistant</i>

Courses in Chemistry

I—GENERAL INORGANIC CHEMISTRY—Introduction. Laws of chemical combination, history, occurrence, preparation and properties of the elements and their principal compounds. Text-book: Fownes' Manual of Chemistry. 2 lectures and 1 recitation or 1 laboratory exercise a week throughout the year. Professor CHANDLER, Mr. WARD, and Dr. VULTÉ

Required of all first-year students in the School of Mines. Open as an elective to Sophomores, Juniors, and Seniors in the School of Arts; with 2 lectures and 1 afternoon per week in the Laboratory throughout the year.

II—PHYSICS AND GENERAL CHEMISTRY—Text-books: Ganot's Physics, Barker's Physics, and Fownes' Chemistry. 4 lectures a week during the first half year, and 3 lectures a week during the second half. Professor CHANDLER

Required of first- and second-year students in the School of Medicine. Open as an elective to Seniors in the School of Arts.

III—CHEMICAL PHYSICS—Lectures and recitations twice a week during the first session. Dr. WIECHMANN

Required of first-year students in the course of Analytical and Applied Chemistry in the School of Mines. Open as an elective to Seniors in the School of Arts.

IV—STOICHIOMETRY—Text-book: Wiechmann's Lecture Notes on Theoretical Chemistry. Lectures and recitations twice a week during the second session. Dr. WIECHMANN

Required of first-year students in the course of Analytical and Applied Chemistry in the School of Mines. Open as an elective to Seniors in the School of Arts.

V—CHEMICAL PHILOSOPHY—Atoms, atomic mass, valence, molecules, structure of molecules, periodic law, solutions, chemical energy, thermo-chemistry, photo-chemistry, electro-chemistry. Text-book: Wiechmann's Lecture Notes on Theoretical Chemistry. Lectures and recitations twice a week throughout the year. Dr. WIECHMANN

Required of second-year students in the course of Analytical and Applied Chemistry in the School of Mines. Minor for the degree of A.M. and first year Ph.D.

VI—CHEMICAL PHILOSOPHY, ADVANCED COURSE—History of chemical theory. Study of selected problems in theoretical chemistry. Physico-chemical methods. Text-books: Ostwald, *Lehrbuch der Allgemeinen Chemie*; Von Meyer, *History of Chemistry*; Lothar Meyer, *Modern Theories of Chemistry*. Lectures, conferences, and recitations 4 hours a week throughout the year. Dr. WIECHMANN

Minor subject for second year for Ph.D.

VII—PREPARATION OF INORGANIC COMPOUNDS, SHORT COURSE—Laboratory work 5 afternoons and one conference a week during the last half of the second term. Text-book: Erdmann's *Anleitung zur Darstellung Chemischer Präparate*. Dr. VULTÉ and Mr. WARD

Required of third-year students in the course of Analytical and Applied Chemistry in the School of Mines.

VIII—PREPARATION OF INORGANIC COMPOUNDS, LONG COURSE—8 hours a week and one conference throughout the year. Bender and Erdmann's *Chemische Präparatenkunde*. Dr. VULTÉ and Mr. WARD

Major for the degree of A.M.

IX.—QUALITATIVE ANALYSIS—Lectures, recitations, and laboratory practice. Text-book: Fresenius' *Qualitative Analysis*. 2 lectures, 2 recitations, and laboratory practice of at least 15 hours a week throughout the year. Dr. WELLS and Dr. CUSHMAN

Required of first-year students in the School of Mines in the courses of Mining Engineering, Electrical Engineering, Metallurgy, Geology, and Analytical and Applied Chemistry. Open to Seniors in the School of Arts. Pre-requisite or parallel Course I.

X—INVESTIGATION OF NEW METHODS OF QUALITATIVE ANALYSIS—Conferences and laboratory practice at least 10 hours a week throughout the year. Dr. WELLS

Major for the degree of A.M. Pre-requisite Courses I. and IX.

XI—THE SPECTROSCOPE AS APPLIED TO QUALITATIVE AND QUANTITATIVE ANALYSES—Laboratory practice and conferences with the instructors, 8 hours a week throughout the year. Professor RICKETTS and Dr. WELLS

Minor for the degree of A.M.

XII—CHEMICAL REACTIONS, QUALITATIVELY AND QUANTITATIVELY CONSIDERED—Conferences and laboratory practice at least 10 hours a week. Dr. WELLS and Mr. BOWEN

Major for the degree of A.M.

XIII—QUANTITATIVE ANALYSIS—Text-book: Cairn's *Quantitative Analysis* and Fresenius' *Quantitative Analysis*. 2 lectures and 2 recitations and laboratory practice 15 hours a week throughout the second year and the first session of the third year. Professor RICKETTS, Mr. BOWEN, and Dr. VULTÉ

Required of second- and third-year students in the course of Analytical and Applied Chemistry in the School of Mines.

XIV—QUANTITATIVE ANALYSIS—Text-book : Cairn's Quantitative Analysis and Fresenius' Quantitative Analysis. 1 lecture, 1 recitation, and laboratory practice 15 hours a week during the second year and the first session of the third year. Professor RICKETTS, Mr. BOWEN, and Dr. VULTÉ

Required of second- and third-year students in the course of Metallurgy in the School of Mines.

XV—QUANTITATIVE ANALYSIS—Text-book : Cairn's Quantitative Analysis and Fresenius' Quantitative Analysis. 1 lecture, 1 recitation, and laboratory practice 15 hours a week during the entire year. Professor RICKETTS, Mr. BOWEN, and Dr. VULTÉ

Required of fourth-year students in the course of Geology and Palæontology in the School of Mines.

XVI—QUANTITATIVE ANALYSIS—Text-book : Cairn's Quantitative Analysis and Fresenius' Quantitative Analysis. 1 lecture, 1 recitation, and laboratory practice 15 hours a week during the second term. Professor RICKETTS, Mr. BOWEN, and Dr. VULTÉ

Required of second-year students in the course of Mining Engineering in the School of Mines.

XVII—SPECIAL VOLUMETRIC METHODS OF QUANTITATIVE ANALYSIS—Conference and laboratory work at least 8 hours a week. Professor RICKETTS
Major for the degree of A.M.

XVIII—REVISION OF CONSTANTS EMPLOYED IN PROXIMATE ANALYSES—Conferences and laboratory work for at least 12 hours a week for one year. Professor RICKETTS and Dr. VULTÉ

Major for the degree of Ph.D.

XIX—SPECIAL METHODS FOR THE ANALYSIS OF PLANTS AND THEIR PRODUCTS—Fibres, starches, sugars, oils. Conferences and laboratory work for at least 12 hours a week for one year. Research. Professor RICKETTS and Dr. VULTÉ

Major for the degree of Ph.D.

XX—ELECTROLYTIC ANALYSIS, QUALITATIVE AND QUANTITATIVE—Conferences and laboratory work for at least 12 hours a week for 2 years. Research. Professor RICKETTS and Dr. WELLS

Major for the degree of Ph.D.

XXI—ASSAYING—Ores and metallurgical products. Text-book : Ricketts' Notes on Assaying. Lectures, recitations, and laboratory practice 15 hours a week for one session. Professor RICKETTS and Mr. MILLER

Required of third-year students in the School of Mines : in the courses of Mining Engineering and Geology during the first session, and in the courses of Metallurgy and Analytical and Applied Chemistry during the second session.

XXII—SPECIAL AND QUICK METHODS OF ASSAYING ORES, METALS, AND FURNACE PRODUCTS—Conferences and laboratory work 8 hours a week for one year. Professor RICKETTS and Mr. MILLER

Minor for A.M. or Ph.D.

XXIII—ORE TESTING FOR THE PROPER SELECTION OF METHODS OF TREATMENT—Conferences and laboratory practice one afternoon a week for one half of the second term. Professor RICKETTS and Mr. MILLER

Required of fourth-year students in the courses of Metallurgy and Mining Engineering.
Minor for A.M. or Ph.D.

XXIV—ORGANIC CHEMISTRY, ELEMENTARY COURSE—Lectures three hours a week throughout the year. Professor COLBY

Minor for the degree of A.M.

XXV—GENERAL ORGANIC CHEMISTRY—Text-books : Richter's *Chemie der Kohlenstoffverbindungen* and Levi's *Organische Praeparate*. Lectures and recitations 6 hours a week, and laboratory practice at least 15 hours a week throughout the year. Professor COLBY and Mr. WARD

Required of fourth-year students in the course of Analytical and Applied Chemistry in the School of Mines. Major for the degree of A.M.

XXVI—ADVANCED ORGANIC CHEMISTRY, MINOR COURSES—Any two of the following subjects : (1) Metallo-organic compounds and their properties ; (2) The terpenes and camphors ; (3) Discussion of the pyrrol and pyridin bases ; (4) Physical properties of organic compounds as related to their molecular constitution ; (5) Studies in thermo-chemistry ; (6) synthetic alkaloids ; and such other subjects as may be selected. Lectures, conferences, and laboratory practice not less than 12 hours a week. Professor COLBY and Mr. WARD

Minor for the degree of Ph.D. Pre-requisite : Course XXIV or XXV.

XXVII—ADVANCED ORGANIC CHEMISTRY, MAJOR COURSES—Any one of the following subjects : (1) Prehnitol and its derivatives ; (2) Adipic acid and its formation from aromatic compounds ; (3) The substitution products of sulpho-benzid ; (4) Investigations on cyan-acids ; and such other subjects as may be selected. Conferences and laboratory practice at least 12 hours a week for one year. Research. Professor COLBY and Mr. WARD

Major for the degree of Ph.D.

XXVIII—PHYSIOLOGICAL CHEMISTRY—Including the preparation and properties of the chief constituents of plants and animals. Text-book : Pellew's *Manual of Medical and Physiological Chemistry*. This course is given twice a year, and consists of 2 lectures and 2 afternoons in the laboratory a week for one half of the year. Mr. PELLEW, Dr. DEGHUÉE, and Mr. JOHNSON

Required of first-year students in the School of Medicine. Open as an elective to Seniors in the School of Arts. Minor for the degree of A.M.

XXIX—APPLIED CHEMISTRY, GENERAL COURSE—The subjects discussed are : (1) Air : nature, sources of contamination, sewer gas, plumbing, draining, disinfection, ventilation. (2) Water : composition of natural waters, pollution, disposal of sewage and house refuse. (3) Artificial illumination : candles, oils, and lamps, petroleum, gas, and its products, electric light. (4) Limes, mortars, and cements. (5) Building stones : decay and preservation. (6) Timber and its preservation : pigments, paints, essential oils, varnishes, preserving pro-

cesses. (7) Explosives: gunpowder, gun-cotton, nitro-glycerine. (8) Glass and ceramics. (9) Electro-metallurgy. (10) Photography. Text-books: Park's Hygiene and Wagner's Chemical Technology. 3 lectures a week throughout the year. Professor CHANDLER

Required of all second-year students in the School of Mines.

XXX—APPLIED CHEMISTRY, SPECIAL COURSE—The subjects discussed are: (1) Chemical manufactures: acids, alkalies, and salts. (a) Sulphur, sulphurous acid, hyposulphites, sulphuric acid, bisulphide of carbon. (b) common salts, soda ash, hydrochloric acid, chlorine, binoxide of manganese, bleaching-powder, chlorates, chlorimetry. (c) Carbonate of potash, caustic potash. (d) Nitric acid and nitrates. (e) Iodine, bromine. (f) Sodium, aluminium, magnesium. (g) Phosphorus, matches. (h) Ammonia salts. (i) Cyanides. (j) Alum, copperas, blue vitriol, salts of magnesia, baryta, strontia. (k) Borates, stannates, tungstates, chromates. (l) Salts of mercury and silver. (m) Oils, fats, soaps, and glycerine

2. Food and drink: milk, cereals, starch, bread, meat, tea, coffee, sugar, fermentation, wine, beer, spirits, vinegar, preservation of food

3. Clothing: textile fabrics, bleaching, dyeing, calico printing, paper, tanning, glue, india-rubber, gutta-percha

4. Fertilizers: guano, superphosphates, poudrettes. Text-books: Wagner's Chemical Technology, Lunge's Manufacture of Sulphuric Acid and Soda; Schultz & Julius' Kuenstlichen Organischen Farbstoffe; Schultz' Chemie des Steinkohlentheers. 3 lectures and 1 recitation per week for two years; one half the subject being discussed each year. Professor CHANDLER and Mr. PELLEV

Required of fourth-year students in the course of Analytical and Applied Chemistry.

Courses in Microscopy and Microbiology

XXXI—MICROSCOPY, SHORT COURSE—Simple and compound lenses, stands, construction, variety, choice, use, and care; objectives and oculars, optical principles, variety, care; method of work, illumination; the eyes, peculiarities, proper use, protection; drawing, free hand, with camera lucida; projection by mirror and by prism; magnification, and micrometry; mounting, dry, in solid, and in liquid media; section cutting and staining; textile fibres; foods and adulterants; micro-chemistry; general accessory apparatus. Two exercises of 2 hours each per week throughout the year. Dr. JULIEN

Required of students in the courses of Geology and Analytical and Applied Chemistry in the second year in the School of Mines.

XXXII—MICROSCOPY, LONG COURSE—Early history, higher optics, special accessories, and microscopical technique as above specified; section cutting with microtome, soft and hard tissues, crystals, rock sections, and loose grains, double staining, micro-refractometry, and homogeneous immersion fluids; micro-spectroscopy and blood examination; micro-mineralogy and micro-lithology; vegetable and animal fibres; paper, ink and handwriting; urinary deposits; photo-micrography. 4 hours per week for two years. Dr. JULIEN

Major for A.M. and minor for Ph.D.

XXXIII—MICRO-CHEMISTRY, GENERAL TECHNIQUE—Salts of ten elements; micro-toxicology, spectroscopy, and blood; micro-refractometry. 2 hours per week for one year. Dr. JULIEN

Minor for A.M. or Ph.D.

XXXIV—THE EXAMINATION OF FOODS AND DRUGS, General Technique—Study of pure and adulterated foods and drugs. 2 hours per week for one year. Dr. JULIEN

Minor for A.M. or Ph.D.

XXXV—THE STRUCTURE OF BUILDING MATERIALS, General Technique—Rock-forming minerals, building stones, brick, and terra-cotta; timber; cast and wrought iron and steel. 4 hours per week for one year. Dr. JULIEN

Minor for A.M. or Ph.D.

XXXVI—PHOTO-MICROGRAPHY, General Photography—Apparatus and lenses, light, color, sensitive plates, exposure, development, and printing. 4 hours per week for one year. Dr. JULIEN

Minor for A.M. and Ph.D.

XXXVII—MICROBIOLOGY—The use of high-power lenses, refraction images, adjustable collar, and immersion fluids, in the study of unicellular organisms, yeasts, amoebæ, infusoria, moulds, algæ and fungi of fresh waters; fauna of potable waters; general bacteriology, and the preparation of culture media; examination of bacteria, staining, mounting; air bacteria, examination of air of class-rooms; water bacteria; biological examination of Croton water, colonies, culture, and identification of species. Two exercises of 2 hours per week throughout the year. Dr. JULIEN

Required of the third-year students in the courses of Geology and Analytical and Applied Chemistry in the School of Mines.

XXXVIII—BACTERIOLOGY, LONG COURSE—Including: (a) General bacteriology, laboratory methods and technique, culture media, isolation of species in colonies, cultures, and identification. (b) Biological analyses of air and potable waters; bacteria of sewage, of typhoid fever, and of Asiatic cholera; bacteriological tests of disinfectants and germicides, and of water filters. Required 4 hours per week for two years. Dr. JULIEN

Major for A.M. and Ph.D.

XXXIX—BREWERS' YEAST, General Technique—Yeasts of malt, cider, and wines; isolation of pure cultures; trial of efficiency, and study of the products of fermentation; examination of commercial samples. Required 4 hours per week for one year. Dr. JULIEN

Major for A.M., minor for Ph.D.

Equipment

I—AT THE 49TH STREET BLOCK

I—There is a chemical lecture-room at the School of Mines fully supplied with apparatus and instruments and all modern facilities for the experimental illustration of the different lecture courses.

II—The museum of general inorganic and organic chemistry, and of the chemical arts, contains the elements and all their more important compounds ; representative sets of specimens of all classes of organic compounds, materials, and products illustrating the chemical arts, together with models, pictures, and diagrams.

III—The Qualitative Laboratory is provided with tables, re-agents, and all the necessary facilities to enable each student to become familiar with the reactions of the different metals and salts. The student is required to repeat all the experiments of the course of instruction at his own table in this laboratory. When he has acquired a thorough experimental knowledge of a group of bases, single members of the group, or mixtures are submitted to him for investigation. He thus proceeds from simple to complex cases, till he is able to determine the composition of the most difficult mixtures. Whenever necessary, he uses the spectroscope in his work.

IV—The Quantitative Laboratory is provided with tables, re-agents, and all necessary apparatus and instruments to enable the student to actually execute with his own hands quantitative analyses. He first analyzes substances of known composition, such as crystallized salts, that the accuracy of his work may be tested by the comparison of his results with the true percentages. He is then required to make analyses of materials occurring in commerce, or in the application of technical sanitary chemistry, metallurgy, and the like, as ores, fertilizers, and waters.

V—The Laboratory for General Inorganic Chemistry—A portion of one of the laboratories is set apart for the use of the students pursuing the course, and they are provided with the apparatus necessary to enable them to repeat all of the simpler experiments in general chemistry, such as the preparation of gases.

VI—Laboratory for the Preparation of Inorganic Compounds—A portion of one of the laboratories is set apart for the use of students pursuing Courses VII and VIII, and is provided with the necessary apparatus and materials.

VII—The Organic Laboratory is especially provided with all necessary apparatus and instruments for the determination of boiling points, melting points, specific gravities, vapor densities, for proximate and elementary analyses, and for the synthetic preparation of organic compounds.

VIII—The Assay Laboratory is provided with crucible, roasting and muffle furnaces for the fire assay of ores ; also with sampling tables, stamp mill, amalgamators, and the like, for ore testing on a larger scale and with the necessary rolls and other apparatus for the wet assay of bullion.

IX—The Laboratories for Microscopy and Microbiology are situated in the upper story of the main building of the School of Mines, and are well lighted from the sides and from skylights. They are fully equipped with microscope stands for the use of the students, and with all apparatus and re-agents required for microscopical manipulations for those branches of biological study which are needed in sanitary and bacteriological investigations and for photo-micrography. There is a culture room for bacterial growths, a dark room for photo-micrographic work, culture baths, and sterilizing ovens, and the more important apparatus required in special investigations. The projection lantern with the electric light is in common use, and work tables are supplied with incandescent

lights. The interesting and extensive collection of microscopes and microscopic accessories and objects, bequeathed to the college by its late President, Dr. Barnard, are preserved in a glass case in this laboratory.

II. AT THE SCHOOL OF MEDICINE AT 437 WEST 59TH STREET

I—There is a Physical and Chemical Lecture Room, fully supplied with apparatus, instruments, and specimens for the illustration of the lectures on these subjects.

II—There is also a chemical laboratory fully equipped with chemical apparatus, microscopes, and other instruments, in which the students practise the processes of medical and physiological chemistry.

DISEASES OF CHILDREN

ABRAHAM JACOBI, M.D.....	<i>Clinical Professor</i>
FRANCIS HUBER, M.D.....	<i>Chief of Clinic</i>
JOSEPH HUBER, M.D.....	<i>Clinical Assistant</i>
F. S. MACHALE, M.D.....	<i>Clinical Assistant</i>
LOUIS M. SILVER, M.D.....	<i>Clinical Assistant</i>
F. E. SONDERN, M.D.....	<i>Clinical Assistant</i>
F. BIERHOFF, M.D.....	<i>Clinical Assistant</i>

Courses

I—CLINICAL LECTURES AT THE VANDERBILT CLINIC UPON THE DISEASES OF CHILDREN—I hour a week throughout the academic year. Professor JACOBI

Required, in the third year, of candidates for the degree of M.D.

II—PRACTICAL INSTRUCTION AT THE VANDERBILT CLINIC IN THE DIAGNOSIS AND TREATMENT OF THE DISEASES OF CHILDREN—10 lessons for each student. Dr. FRANCIS HUBER

Optional, in the third year, for candidates for the degree of M.D.

III—HOSPITAL CLINIC—Bellevue Hospital, Mondays, 2.30 P.M., from April to June. Professor JACOBI

DERMATOLOGY

GEORGE HENRY FOX, M.D.....	<i>Clinical Professor</i>
GEORGE THOMAS JACKSON, M.D.....	<i>Chief of Clinic</i>
CHARLES C. RANSOM, M.D.....	<i>Clinical Assistant</i>
JOHN CABOT, M.D.....	<i>Clinical Assistant</i>

Courses

I—CLINICAL LECTURES AT THE VANDERBILT CLINIC) UPON THE DISEASES OF THE SKIN—I hour a week throughout the academic year. Professor FOX

Required, in the third year, of candidates for the degree of M.D.

II—PRACTICAL INSTRUCTION AT THE VANDERBILT CLINIC IN THE DIAGNOSIS AND TREATMENT OF THE DISEASES OF THE SKIN—6 lessons for each student. Dr. G. T. JACKSON

Optional, in the third year, for candidates for the degree of M.D.

ECONOMICS AND SOCIAL SCIENCE

RICHMOND MAYO-SMITH, Ph.D.....	<i>Professor</i>
EDWIN ROBERT ANDERSON SELIGMAN, LL.B., Ph.D.....	<i>Professor</i>
FRANKLIN HENRY GIDDINGS, A.M.....	<i>Lecturer</i>
WILLIAM ZEBINA RIPLEY, Ph.D.....	<i>Prize Lecturer</i>
STEPHEN FRANCIS WESTON, A.M.....	<i>Assistant</i>

General Statement

The courses offered fall into two divisions: Political Economy and Finance, and Sociology and Statistics. Courses I (A) and II are the general introductory courses primarily intended for Juniors in the School of Arts. Courses III and V are intended to give a general survey, respectively, of political economy and finance, from the historical and comparative point of view. While serving as useful courses for those intending to specialize still further in economics or sociology, they are especially recommended to those who desire to secure some knowledge of political economy as a part of a liberal education. Courses I to VIII will be found of especial value to law students seeking to supplement their purely legal studies. Course XVI is an introductory course leading up to Course XIX. Course XIX is the general systematic course laying the basis for the other courses in applied sociology. Courses XVI to XXI, together with Courses III and IV, will be of value to students of theology who wish to extend their knowledge of the social problems of the day.

In addition to the regular courses, there are three seminaria, organized to furnish students opportunity for special investigation and original research. The preliminary seminarium in political economy (XIV) is intended for Seniors and those students who have had only one year in economics. Work in the seminarium in political economy and finance (XV) takes place at the residence of the professor, in a library especially arranged for this purpose. The other seminaria are conducted in the special seminarium rooms of the university.

The allied courses in history and public law will be found extremely useful for the students of social science, because of the close interrelations of history, law, and economics. Taken together these courses constitute a complete scheme of political science.

Course I (A) is required of Juniors in the School of Arts. Course II is open to Juniors in the School of Arts. Courses III, V, VI, and XVI are open to Seniors in the School of Arts and other candidates for the degree of A.B. The remaining courses are intended primarily for advanced students.

Courses in Political Economy and Finance

I (A)—ELEMENTS OF POLITICAL ECONOMY—Walker's Political Economy—Recitations and essays. 2 hours, second term. Professor MAYO-SMITH and Mr. WESTON

M. or Tu. and W. at 1.30

(II) ECONOMIC HISTORY—Selected text books, recitations, essays, and lectures. 2 hours, second term. Professor SELIGMAN and Mr. WESTON.

III—HISTORICAL AND PRACTICAL POLITICAL ECONOMY—Lectures, discussions, and reading. 3 hours. Professor MAYO-SMITH

M. and W. at 3.30, and F. at 1.30

IV—HISTORY OF POLITICAL ECONOMY—Lectures, discussions, and readings. 2 hours. Professor SELIGMAN

Tu. and Th. at 3.30.

V—SCIENCE OF FINANCE—Lectures and private reading. 2 hours. Professor SELIGMAN

Tu. and Th. at 4.30

VI—FINANCIAL HISTORY OF THE UNITED STATES—Lectures and private reading. 2 hours, second term. Professor SELIGMAN

[To be given in 1895-6, and every alternate year thereafter.]

Tu. and Th. at 3.30

VII—TARIFF HISTORY OF THE UNITED STATES—Lectures and private reading. 2 hours, first term. Professor SELIGMAN

[To be given in 1895-6 and every alternate year thereafter.]

VIII—RAILROAD PROBLEMS—Lectures and private reading. 2 hours, first term. Professor SELIGMAN

[To be given in 1895-6 and every alternate year thereafter.]

XIV—PRELIMINARY SEMINARIUM IN POLITICAL ECONOMY.—Essays, discussions, and private reading. 2 hours. Professor SELIGMAN and Mr. WESTON

F. 2.30 to 4.30

XV—SEMINARIUM IN POLITICAL ECONOMY AND FINANCE—2½ hours bi-weekly. Professor SELIGMAN

M. evenings

Courses in Sociology and Statistics

XVI—PHYSICAL GEOGRAPHY AND ANTHROPOLOGY—Lectures and private reading. 2 hours, second term. Dr. RIPLEY

Tu. and Wed. at 10.30

XVII—PRACTICAL STATISTICS—Lectures, practical exercises, and private reading. 2 hours, first term. Professor MAYO-SMITH

F. 2.30 to 4.30

XVIII—THE SCIENCE OF STATISTICS—Lectures and private reading. 2 hours. Professor MAYO-SMITH

M. and W. at 4.30

XIX—SOCIOLOGY—Lectures and private reading. 2 hours, first term. Professor GIDDINGS

F. 3.30 to 5.30

XX—SOCIALISM AND COMMUNISM—Lectures and private reading. 2 hours. Professor MAYO-SMITH

M. and W. at 4.30

[To be given in 1895-6 and every alternate year thereafter.]

XXI—CRIME AND PENOLOGY—Lectures and private reading. 2 hours, second term. Professor GIDDINGS

F. 3.30 to 5.30

XXX—SEMINARIUM IN SOCIAL SCIENCE—2 hours, bi-weekly. Professors MAYO-SMITH and GIDDINGS

Equipment

The library facilities are unexcelled. Every journal of importance, American or foreign, dealing with economics or social science, is taken regularly by the library. Any book needed by advanced students can usually be bought at once. The special library of history and political science comprises about sixty five thousand volumes.

Students of economics and social science will find New York to be a centre of library facilities absolutely unrivalled elsewhere in this country. In addition to the university library there are rich treasures at the Astor Library, Lenox Library, New York Historical Library, Long Island Historical Library, Library of the Charity Organization Society, the Bar Association Library, and the Law Institute Library, to each of which students have access under favorable conditions. Advanced students also have at their disposal the library of the professor of political economy and finance, which contains the most complete collection of works on political economy to be found in the United States.

ENGINEERING

Civil Engineering

WILLIAM HUBERT BURR, C.E.....	<i>Professor</i>
JAMES LEAL GREENLEAF, C.E.....	<i>Adjunct Professor</i>
ANDREW ERNEST FOYÉ, C.E.....	<i>Tutor</i>
GUSTAVE R. TUSKA, B.S., M.S., C.E.....	<i>Assistant</i>

General Statement

The work in the Department of Civil Engineering is designed to afford a thorough analytical training, as well as numerous and extended practical exercises in those matters pertaining to the profession of the civil engineer. The theoretical portion of the instruction is based largely upon the courses given in the departments of Mathematics, Mechanics, and Physics, and the results ob-

tained are applied to practical engineering work. Special stress is laid upon the design by the student of the various structures which the civil engineer is called upon to construct in the practice of his profession. The instruction is given by lectures, demonstrations by the students, and frequent conferences, co-ordinate with which the work of design is continuously carried on. Courses I to XV inclusive are required of all students in Civil Engineering. Courses I, V, VI, VII, XIII, XIV, and XV are required of all students in Mining Engineering and Metallurgy. Courses V and VII are required of all students in Electrical Engineering

Courses

I—THEORY OF SURVEYING—Compass surveying—Farm surveying with preliminary work—Computations. Lectures and recitations 2 hours a week during the first session, first year. Reference books: Johnson's Theory of Surveying and Davies' Surveying. Professor GREENLEAF and Mr. TUSKA

II—SANITARY ENGINEERING OF BUILDINGS—Drainage of buildings—Plumbing of buildings—Service and soil pipes and their connections—Sewer connections. Lectures 1 hour weekly through both sessions, second year. Professor GREENLEAF

III—ROAD ENGINEERING—Surveys and location of roads—Drainage and grades—Foundations—Selection and treatment of materials—Telford and McAdam pavements—City pavements of brick, Belgian and granite blocks, asphalt, cement, and concrete—Machinery and tools required in the construction of roads and pavements—Maintenance of roads and pavements—Elements of expense and total cost of construction and maintenance. Reference book: Byrne's Highway Construction. Lectures and recitations 1 hour per week during both sessions, second year. Mr. FOYÉ

IV—WATER-SUPPLY ENGINEERING AND IRRIGATION—Rainfall and storage—Flow of streams—Influence of soils, elevation, and geological character of water-shed—Methods of supply, gravitation, pumping from rivers or natural underground storage, flow from the latter.—Reservoir construction—Sedimentation and filtration—Distributing system—House supply and wastage—Irrigation of land—Amounts and periods of application—Construction of, and flow through, division and distributing canals. Reference books: Fanning's Water Supply and Wilson's Irrigation Engineering. Lectures and recitations 2 hours per week through the first session, third year. Professor GREENLEAF

V—ELASTICITY AND RESISTANCE OF THE MATERIALS OF ENGINEERING—Laws of elasticity in homogeneous materials—Co-efficients of elasticity—Relations between stresses and strains—Common and exact theories of torsion and flexure—Elastic limits, working stresses and ultimate resistances of wrought-iron, cast-iron, steel, alloys, timbers, building stones, cement, concrete, and masonry—Complete treatment of simple and continuous beams—The design and construction of iron, steel, and timber columns and beams, including the design and construction of plate girders—Shafts—Cables—Fatigue of materials

—Specifications. Lectures and recitations 3 hours a week during the first session, and 2 hours per week during the second session, third year. $7\frac{1}{2}$ hours per week in the first session, and 5 hours in the second session, of problem and design work, are required in the drawing academy. Reference and text-book: Burr's Elasticity and Resistance of Material. Professor BURR

VI—GRAPHIC STATICS—Equilibrium polygon, and polygonal frames for all systems of loads—Graphical representations of shears and moments for both non-continuous and continuous beams—Fixed and moving loads—Applications to bridge and railway trusses. Lectures 2 hours a week during the second session, third year. 5 hours per week of problem and design work are required in the drawing academy. Reference book: Hoskin's Graphic Statics. Professor GREENLEAF

VII—ANALYTICAL THEORY OF TRUSSES—The truss element—Simple cantilever and non-continuous trusses with parallel chords—Fixed and moving loads—Through and deck spans—Positions of any system of concentrated moving loads for greatest chord and web stresses when chords are both parallel and not parallel—Combination of moment and graphic methods—Skew and irregular trusses—Applications to highway and railway trusses—Braced arches and arched ribs. Lectures 2 hours per week during the second session, third year, with frequent conferences and problems in computations of stresses and preparation of stress sheets. 5 hours per week of problem and design work are required in the drawing academy. Reference and text-book: Burr's Stresses in Bridge and Railway Trusses. Professor BURR

VIII—SEWAGE DISPOSAL—Treatment and disposal of sewage and refuse of manufacturing—Sedimentation by gravity and by chemical purification—Treatment of effluent by continuous and intermittent sand filtration—Fertilization—Intermittent application to soil with under-drainage—Disposal of sludge—Theory and construction of sand filters—Plants for sewage treatment—Pollution of potable water and its purification by continuous and intermittent sand filtration—Design of sand filters for water purification. 2 lectures per week during the first session, third year. Professor BURR

IX—RAILROAD ENGINEERING—Economics of location, operation, and maintenance—Equating grades and curves—Estimating quantities and writing specifications—Contracts—Track and switch work—Block and other systems of signalling—Buildings and structures—Organization. 3 lectures per week half of first session and all of the second session, fourth year. Reference book: Parson's Track. Mr. FOYÉ

X—THE DESIGN AND CONSTRUCTION OF BRIDGES, ROOFS, AND BUILDINGS—Railway and highway bridges—Pin and riveted connections—Single and multiple systems of bracing—The design of details for bridges, roofs, and buildings—Floors for railway and highway bridges—The design and operation of drawbridges, including engines, locking, lifting, and turning machinery—Cantilever structures—Wind loads and stresses—Single and double track viaducts or trestles in iron, steel, and timber—Lateral and transverse systems

of bracing—The design and construction of elevated railroads—The complete design of a railway bridge, with estimate of cost—The erection of iron, steel, and timber structures, including the costs of erection. Lectures and recitations 2 hours per week during both sessions, fourth year, with frequent conferences and continuous work in design. 5 hours per week of problem and design work are required in the drawing academy. Reference and text-book: Burr's Stresses in Bridge and Railway Trusses. Professor BURR

XI—RETAINING WALLS, ARCHES, HIGH MASONRY DAMS, AND FOUNDATIONS—Pressure and abutting power of earth—Design and construction of retaining walls—Stability of chimneys and towers under wind pressure—Theory and design of arches with vertical and inclined loads—Theory and design of reservoir walls, earth, and high masonry dams—Earth foundations—Foundations for buildings—Cement, concrete, and masonry—Safe loads on masonry and foundation beds—Pile driving and pile foundations—Safe loads for piles—Protection and preservation of piles and timber—Pneumatic foundations and caisson work—Open dredging—Bridge piers of masonry and cylinders—Methods of working in quicksands—Tunnelling. Reference books: Cain's Retaining Walls, Patton's Foundations, and Baker's Masonry and Foundations. Lectures 2 hours per week during both sessions, fourth year, with frequent conferences and continuous work in design. 5 hours per week of problem and design work are required in the drawing academy. Professor BURR

XII—THE DESIGN AND CONSTRUCTION OF SEWERS, AND RIVER AND HARBOR IMPROVEMENTS—Sewage and surface drainage of cities and towns—Separate and combined systems of sewers—Capacities of mains and branches—Catch basins—Manholes—Chimneys or ventilators—Flush tanks—Outfalls—Grades—Flow or discharge of sewers—Construction—Jetty system of river improvements—Scouring action of currents—Erosion of river banks—Dams for improvement of river navigation—Breakwaters—Dykes—Groins—Buttress work—Docks—Harbor works—Iron piers—Estimates of cost. 2 lectures per week during the second session, fourth year, with frequent conferences. Professor BURR

The Summer School of Surveying

This school is conducted during ten to twelve weeks of each summer vacation at a point in the country near Litchfield, Conn., where ample facilities are provided for all requisite operations, and where the topography is admirably adapted to the practical work of surveying. The operations at the summer school include the entire actual surveying of the department of Civil Engineering, together with such lectures, computations, and mapping as pertain to it. About six weeks' continuous attendance is required of each class between the first and second, and the second and third years, and four weeks between the third and fourth years. The school possesses an unusually full equipment of engineer's and solar transits, levels, plane tables, compasses, and all accessories and smaller instruments. A corps of special assistants for each session aid the regular officers of the school. At each session the following courses are given :

XIII—SURVEYING BETWEEN THE FIRST AND SECOND YEARS—Pacing, chaining, and ranging—Farm survey—Adjustment of instruments—Angle reading by repetition—Repetition traverse. Daily lectures, field and office work. Professor GREENLEAF and Mr. FOYÉ

XIV—SURVEYING BETWEEN THE SECOND AND THIRD YEARS—Azimuth traverse—Levelling—Topographical survey with plane table—City surveys—Contour sketching. Daily lectures, field and office work. Professor GREENLEAF and Mr. FOYÉ

XV—SURVEYING BETWEEN THE THIRD AND FOURTH YEARS—Railroad surveying—Reconnaissance—Preliminary survey—Location—Cross-sectioning—Computations—A complete survey and location of a line two to five miles long are made, with all the attendant computations requisite for placing the work under contract. Daily lectures, field and office work. Professor GREENLEAF and Mr. FOYÉ

A satisfactory Project or Thesis is required of every candidate for the degree of Civil Engineer at graduation.

Electrical Engineering

FRANCIS B. CROCKER, E.M. *Professor*
 GEORGE FRANCIS SEVER *Instructor*
 WILLIAM HORATIO FREEDMAN, C.E., E.E. *Tutor*

Of the courses offered by this department, Courses II, III, VIII, and XI are required of fourth-year students, candidates for the degree of Electrical Engineer; Courses I, IV, VI, IX, and X, of third-year students, candidates for the degree of Electrical Engineer; Course V of third-year students, candidates for the degrees of Mining Engineer, Civil Engineer, and Metallurgical Engineer; and Course VII of second-year students, candidates for the degree of Electrical Engineer. Courses XII to XIX are elective for candidates for the A.M. and Ph.D. degrees.

The theoretical side of electrical engineering is treated by lectures delivered by Professor PUPIN in the department of Mechanics, under which head the various courses will be found.

Courses

I—DYNAMO PRACTICE—Principles, construction, operation, and design of dynamos and electric motors. (Dynamo Electric Machinery, Thompson; The Dynamo, Hawkins and Wallis.) 4 hours a week, first term. Professor CROCKER

II—ELECTRIC POWER—Transmission and distribution of electric power. (Electric Transmission of Energy, Kapp.) 3 hours, first term. Professor CROCKER

III—ELECTRICAL ENGINEERING—Advanced telegraphy and telephony ; submarine, autographic, printing, and multiplex telegraphy, and special signalling systems ; electro-metallurgy and electro-chemistry ; special applications of electricity. 1 hour, first term ; 2 hours, second term. Professor CROCKER

IV—ELECTRIC LIGHTING—The design, installation, and operation of electric lighting systems and plants, including a discussion of each of the various elements employed. 3 hours, second term. Professor CROCKER

V—ELECTRICAL ENGINEERING—The principles of electrical engineering and their application to general engineering. 2 hours lectures and 2 hours laboratory work, second term. Professor CROCKER

VI—ELECTRICAL ENGINEERING—Telegraphy and Telephony. (Pope's Modern Practice of the Electric Telegraph ; Poole's Practical Telephone Handbook.) 2 hours, second term. Professor CROCKER and Mr. FREEDMAN

VII—ELEMENTS OF ELECTRICAL ENGINEERING—General electrical principles, laws, measurement, etc., and the introduction to their applications. (Elementary Lessons in Electricity and Magnetism, Thompson.) 3 hours, second term. Professor CROCKER and Mr. FREEDMAN

VIII—ELECTRIC RAILWAY—Special instruction in design, installation, and operation of the various systems of electric railways. 2 hours, second term. Mr. SEVER

IX—ELECTRICAL MEASUREMENTS

1. A mathematical treatment of electrostatics, including theory of potential, capacity, specific inductive capacity, electrometer
 2. A mathematical treatment of magnetic induction, electric current, current sheets, resistance measurements, galvanometer
- 2 hours, entire year. Mr. FREEDMAN

X—ELECTRICAL ENGINEERING LABORATORY

1. Dynamos and motors—Tests of resistances, insulation, voltage, current, heating friction, etc., and examination of mechanical construction
 2. Dynamos—Determination of energy consumed at various loads by dynamometer ; efficiency tests
 3. Motors—Determination of energy consumed at various loads ; Prony brake ; efficiency tests
 4. Determination and plotting of the various characteristic curves of dynamos and motors
 5. Location and remedy of faults in dynamos and motors
 6. Operation of steam-engine and use of indicator in determining power used in dynamos
- 8 hours, entire year. Mr. SEVER

XI—ELECTRICAL ENGINEERING LABORATORY—Advanced electrical measurements and testing, including self-induction, capacity and magnetic measurements, thereby becoming familiar with the use of ballistic galvanometer, electrometer, electro-dynamometer, secohmmeter, including tests of cables, and alternating current apparatus. 8 hours, entire year. Mr. FREEDMAN

XII—HISTORY OF THE DEVELOPMENT OF THE APPLICATIONS OF ELECTRICITY. Professor CROCKER

XIII—THEORY OF ELECTROLYSIS AND OF PRIMARY AND SECONDARY BATTERIES. Professor CROCKER

XIV—DIRECT CONVERSION OF THE ENERGY OF FUEL INTO ELECTRICITY. Professor CROCKER

XV—SPECIAL FORMS OF DYNAMO AND MOTOR—High frequency, high potential, unipolar, etc. Professor CROCKER

XVI—LONG-DISTANCE TRANSMISSION OF ELECTRIC POWER. Professor CROCKER

XVII—THEORY OF THE TELEPHONE. Professor CROCKER

XVIII—MULTIPLEX AND AUTOGRAPHIC TELEGRAPHY. Professor CROCKER

XIX—SPECIAL APPLICATIONS OF ELECTRICITY TO MINING, MECHANICAL, CIVIL, AND METALLURGICAL ENGINEERING. Professor CROCKER .

Equipment

The department of Electrical Engineering occupies five rooms ; one used for lecture purposes, two for laboratories, and two for special investigations and experimental work by the officers of the department.

The apparatus of the department naturally divides itself into three classes :

a. Machinery.

b. Practical apparatus and measuring instruments.

c. Instruments of precision.

The machinery includes a steam-engine and complete electric-lighting plants of the three principal types, *i.e.*, arc, incandescent (direct current), and alternating current, each of practical size. These are in addition to the regular electric-lighting plant of the college which has 1000 light capacity and is available for experiment and continuous supply of current. There are also a number of dynamos, motors, and dynamotors of various sizes and types, a lathe, electric-drill press, and tools of all kinds.

The practical apparatus consists of examples of apparatus used in telegraph and telephone work, and various primary and secondary batteries.

The practical measuring instruments furnish examples of almost every form of voltmeters, ammeters, and the like, many being duplicated.

The instruments of precision comprise a fine collection of standard resistances, condensers, cells and standards of self-induction, standard ampere balances, and a standard Anthony bridge, together with numerous galvanometers, rheostats, electrometers, electro-dynamometers, and the like.

The department is also rapidly acquiring a very instructive museum, in which can be found illustrations of the various electrical devices and materials used in practice.

Mechanical Engineering

FREDERIC R. HUTTON, C.E., Ph.D.....	<i>Professor</i>
RALPH E. MAYER, C.E.....	<i>Instructor</i>
IRA H. WOOLSON, E.M.....	<i>Instructor</i>
LUTHER E. GREGORY, C.E.....	<i>Assistant</i>
FRANCIS A. PROVOT, C.E.....	<i>Assistant</i>

Of the courses offered by the department, Course I is required for all students in the School of Mines of the first year (except students in the course of Architecture), and is open to Seniors of the School of Arts, and to other students of like proficiency ; from Course II the different courses in the School of Mines and special students select those parts appropriate to them ; Courses III and IV are for students in Electrical Engineering and special students ; Courses V to XIII are for students in Engineering in all courses ; Course XIV is for the students in Civil Engineering in the third class, and Courses XV and XVI are for the fourth-class students in that course. Courses XVII and XVIII are electives for engineering students of the fourth class and for special students, and Course XIX for all engineers of the third class, but is optional. Special students are admitted to the courses for which previous training may have fitted them. All courses intended for undergraduates in the School of Mines may be pursued by graduates of that or other schools of like grade and standing as graduates' courses, the instruction for such persons being carried further in specialization than the time available permits to candidates for undergraduate degrees. The instruction for such advanced students will be by prescribed reading, by problems assigned, and by work in the mechanical laboratories under individual instruction. These supplementary courses will vary in difficulty with the amount of time necessary according to the needs of the individual and the subject. Experimental investigation is a special feature of such work in Courses V to XIII, XVI, and XXII. The first additional courses to be provided for graduates solely will be : XX, XXI, and XXII.

Courses

I*—ELEMENTARY MECHANICAL DRAWING—First term, use of instruments, elementary projections ; second term, descriptive geometry, graphics, and stereotomy. 3 hours lectures, 10 hours drawing academy. Mr. MAYER and Mr. PROVOT

II*—SPECIALIZED ENGINEERING DRAWING—Topographical and geological, charts and map ; working and isometric drawing of machinery, furnaces, and structural work. Tracing and blue printing, and shop drawings. 3 hours lectures, 10 hours drawing academy. Mr. MAYER and Mr. PROVOT

III—MECHANICAL ENGINEERING AND MACHINE DESIGN—Proportion of parts of machinery, special graphical statics, shop and working drawings for

* Courses I and II are conducted as courses in Mechanical Engineering by provisional assignment until further notice.

execution. 10 hours per week, alternate weeks in drawing room. Mr. WOOLSON and Mr. GREGORY

IV—ADVANCED THESIS DRAWING—From designs for assigned problem in engineering. Professor HUTTON and Mr. WOOLSON

V—PROPERTIES OF MATERIALS—(A) General properties of all materials used in engineering, castings, and ingot metals. 2 hours lectures first term. Professor HUTTON

VI—PROPERTIES OF MATERIALS—(B) Wrought iron and steel, fabrication and shop processes. Inspection of product, and tests of material ; structural alloys. 2 hours lectures, second term ; laboratory work with testing machines. Professor HUTTON, Mr. WOOLSON, and Mr. GREGORY

VII—HEAT AND ITS APPLICATIONS—(A) Fuels for motive power, transfer of heat, generation of steam, chimneys, artificial draft, use of steam in engines. 2 hours lectures, first term ; laboratory practice. Professor HUTTON and Mr. GREGORY

VIII—HEAT AND ITS APPLICATIONS—(B) Gas and air engines, combined vapor engines, ammonia and other vapor engines, air compressors, refrigerating machinery. 2 hours lectures, second term. Professor HUTTON

IX—DESIGN AND MANAGEMENT OF BOILERS—Construction, typical forms, setting, running, tests, and inspection. 2 hours lectures, first term. Professor HUTTON

X—DESIGN AND MANAGEMENT OF ENGINES—Construction, valve-gear, mechanisms, handling, erection, and repair. 4 lectures per week, second term. Professor HUTTON

XI—MOTORS OTHER THAN STEAM—Animal, water, wind, and wave motors ; turbines. 1 hour lecture, first term. Professor HUTTON

XII—DYNAMICS—Work of motors, friction, efficiency, dynamometers, governors, regulators, etc. 1 hour lecture, second term. Professor HUTTON

XIII—MACHINERY AND MILLWORK—Motion, velocity, transmissive principles, conversion of motion, teeth of wheels, general mechanism. Rankine's Machinery and Millwork. 2 hours lectures. Mr. WOOLSON

XIV—PUMPS AND PUMPING ENGINES—Construction, design, mechanisms, types, valves, efficiency, duty, erection, and management. Special course of six lectures, first term. Professor HUTTON.

XV—THE LOCOMOTIVE ENGINE—The types of engine, their running gear, the boiler, the mechanism, the design and performance in hauling loads, the compound locomotive ; accessory features to the motive power. 3 hours lectures, 10 weeks of first term. Mr. WOOLSON

XVI—TESTING EFFICIENCY OF MOTORS—By dynamometer, by indicator, by measurement of rejected heat ; calorimetry, engine-testing, boiler-testing. Special lectures and laboratory practice. Professor HUTTON and Mr. GREGORY

XVII—TESTING OF MATERIALS OF ENGINEERING—Determinations of tensile, compressive, transverse, and torsional resistances; constants of formulæ; abrasive and frictional qualities of alloys. Special lectures and laboratory work. Professor HUTTON, Mr. WOOLSON, and Mr. GREGORY

XVIII—CEMENT TESTING—Sampling, mixing, setting, and tension and compressive tests. Special lectures and laboratory practice. Mr. WOOLSON and Mr. GREGORY

XIX—VACATION CLASS IN MECHANICAL ENGINEERING—During the latter half of the school year visits are made to shops, factories, iron and steel works, pumping stations, etc., for the study of practice in these lines. The time occupied during the third year is variable according to circumstances. The instruction is conducted by Professor HUTTON, Mr. WOOLSON, and Mr. GREGORY

XX—SHOP AND FACTORY ORGANIZATION AND MANAGEMENT—Cost, accounts, administration.

XXI—HYDRAULIC ENGINEERING

XXII—MARINE ENGINEERING

Equipment

The department of Mechanical Engineering occupies the fourth floor of the two wings of the School of Mines building, and has laboratories near the ground in two other buildings.

For the courses in Drawing use is made of a very complete set of Olivier models, where warped surface elements are represented by tense threads; of intersections of surfaces and the standard forms in stereotomy. For advanced work in machine design, actual models and full-sized specimens of machinery details in section, pumps, injectors, etc. are accessible to the students.

For the Properties of Materials courses a most valuable collection of new and old material, which has failed under strain, is continually receiving additions.

The Testing Laboratory is equipped with three standard machines for determining tensile, compressive, and transverse strength of material, a Fairbanks, Riehle, and Emery of 50,000, 100,000, and 150,000 pounds' capacity respectively. The latter machine is of the same type as the machine used in the Government Testing Works at Watertown, Mass., and is most remarkable for its sensitiveness and accuracy. It is particularly adapted for careful scientific investigation. The other machines are suited for rapid commercial work where extreme accuracy is not necessary. Provisions are made for measuring the deformation of the various specimens by micrometers and extensimeters while in process of testing. New facilities for making all kinds of tests are continually being added.

The Cement Laboratory is furnished with a full complement of moulds, settling tanks, sieves, perforation wires, and a Riehle testing machine with improved briquette holders.

For the courses in Heat and Steam the collections embrace representative types of much of the apparatus used by the engineer in his research and his daily practice. A battery of steam boiler injectors is mounted over a tank for experiment; standard and test gauges, and a mercury column are available for calibration of instruments, steam-engine indicators and apparatus for standardizing; anemometers to measure air currents and apparatus for calibration, calorimeters for measuring the moisture in steam, and pyrometers and thermometers for its temperature. The laboratories operate five small engines and two pumps, and the department controls for purposes of test and experiment nine other large and small engines, operating college machinery outside of the laboratories. To measure power of motors are several Prony brakes and an Alden absorption dynamometer, and for measurement of transmitted power a Webber, a Van Winkle, and an Emerson dynamometer, so mounted that they can be mutually compared. A Sturtevant fan blower furnishes a controllable resistance, and an opportunity for investigating such apparatus. The shop of the department has a lathe and a planer, and an equipment of bench-tools. A Wheeler surface condenser with necessary tanks, thermometers, and weighing scales enables the consumption of steam to be measured concurrently with the power developed.

The courses in Dynamics and Millwork are illustrated by models of transmission and conversion of motion, and of the different types of water wheels, turbines, and other motors.

A working specimen of the Westinghouse air brake is at the service of students in Railway Engineering, with air pump and all valves complete, and a working model of a locomotive engine to a full one-quarter scale is mounted on rails, and can be run by steam or compressed air.

For the other and for all courses a most abundant and complete library collection of drawings, photographs, blue-prints, and lantern slides enables instruction to be made most clear and pointed.

Great use is made in instruction of electrotypes from standard designs, prints from which are distributed in the class-room.

ENGLISH

English Language and Literature

THOMAS RANDOLPH PRICE, M.A., LL.D. *Professor*
A. V. WILLIAMS JACKSON, A.M., L.H.D., Ph.D. *Adjunct Professor*

Of the courses offered by the department I, II, VI, and IX are elective for Seniors and Juniors in the School of Arts, III, V, VII, and VIII for Seniors and University students, and IV, for University students

I—LAWS OF MODERN ENGLISH PROSE COMPOSITION—2 hours. Text-book: Representative Essays. Professor PRICE

II—SHAKSPERE—Language, versification and method of dramatic construction. 2 hours. Text: Cambridge Text of Shakspeare. Professor PRICE

III—CHAUCER—Language, versification, and method of narrative poetry. 2 hours. Text: Clarendon Press Text of Chaucer. Professor PRICE

IV—ANGLO-SAXON PROSE AND HISTORICAL ENGLISH SYNTAX—2 hours. Anglo-Saxon Prose Texts: Sweet, Bright, Grein, etc. Professor PRICE

V—THE POETRY OF TENNYSON, BROWNING, AND MATTHEW ARNOLD—2 hours. Professor PRICE

VI—ANGLO-SAXON LANGUAGE AND HISTORICAL ENGLISH GRAMMAR—2 hours. Sweet's Anglo-Saxon Primer and Short Historical English Grammar; Lounsbury's History of the English Language; Bright's Anglo-Saxon Reader; Lectures on English Philology, practical exercises and study of English authors. Professor JACKSON

VII—ANGLO-SAXON POETRY—2 hours, first term. Professor JACKSON

VIII—EARLY AND MIDDLE ENGLISH FROM THE 12TH TO THE 15TH CENTURY.—2 hours, second term. Professor JACKSON

IX—ENGLISH DRAMA, EXCLUSIVE OF SHAKSPERE, TO THE CLOSING OF THE THEATRES.—2 hours. Professors JACKSON and WOODBERRY

(Course IX not given in 1893-4.)

Literature

GEORGE EDWARD WOODBERRY, A.B.....*Professor*
BRANDER MATTHEWS, A.M., LL.B.....*Professor*

Of the courses offered by the department, A is prescribed for Sophomores in the School of Arts, I to III and V to X are open to all university students; IV only to students who have already taken I.

A—EIGHTEENTH CENTURY ENGLISH LITERATURE—2 hours. Professor WOODBERRY

Tu. and Th. at 11.30

I—THE HISTORY AND THEORY OF CRITICISM—Plato, Aristotle, Horace, Quintilian, Sidney, Boileau, Dryden, Lessing, Coleridge. 2 hours. Professor WOODBERRY

W. and F. at 12.30

II—THE EPOCHS OF THE DRAMA.—Greek, Latin, Spanish, English, French, German. 2 hours. Professor BRANDER MATTHEWS

Tu. and Th. at 2.30

(Given in 1893-4 and each alternate years thereafter.)

III—THE HISTORY OF MODERN FICTION—I hour. Professor BRANDER MATTHEWS

W. at 1.30

IV—THE PRACTICE OF CRITICISM—A review of the greater works of literature, with specific original inquiries in particular epochs.—Conferences and dissertations. Professor WOODBERRY

V—ENGLISH DRAMA TO THE CLOSING OF THE THEATRES (1640), EXCLUSIVE OF SHAKSPERE—2 hours. Professors JACKSON and WOODBERRY
Tu. and Th. at 12.30

VI—SPENSER AND THE ELIZABETHAN POETS, EXCLUSIVE OF DRAMA—1 hour (first term). Professor WOODBERRY
F. at 10.30.

VII—MILTON AND THE CAROLINE POETS—1 hour, second term. Professor WOODBERRY
F. at 10.30.

VII—NINETEENTH CENTURY ENGLISH LITERATURE—2 hours. Professor WOODBERRY
W. and F. at 11.30

IX—AMERICAN LITERATURE—2 hours. Professor BRANDER MATTHEWS
Tu. and Th. at 1.30.

X—THE ART OF ENGLISH VERSIFICATION—I hour. Professor BRANDER MATTHEWS
W. at 2.30

Rhetoric and English Composition

GEORGE RICE CARPENTER, A.B.....*Professor*
CHARLES SEARS BALDWIN, A.M.....*Tutor*
CLARENCE WALTON VAIL, A.M.....*Assistant*

Course A is prescribed for Freshmen in the School of Arts, B for Sophomores, and C for Juniors. Courses I and II are open to properly qualified Juniors and Seniors.

A—RHETORIC AND ENGLISH COMPOSITION—Carpenter's "Exercises in Rhetoric and English Composition." Recitations, weekly themes; in the second term lectures on certain English and American authors as models of style. 3 hours. Professor CARPENTER, Mr. BALDWIN, and Mr. VAIL

B—PRACTICE IN VARIOUS KINDS OF ENGLISH COMPOSITION—Fletcher's "Introduction to Theme-Writing." Weekly essays, lectures, and consultations. 1 hour. Professor CARPENTER and Mr. BALDWIN

C—FOUR ESSAYS—Voluntary lectures, consultations. Professor CARPENTER and Mr. BALDWIN

I—ENGLISH COMPOSITION—Daily themes and fortnightly essays. Lectures and consultations. 2 hours, first term. Professor CARPENTER

(Given in 1894-5.)

II—ENGLISH COMPOSITION (Advanced Course)—Lectures and discussions in regard to style; essays and other written work. 2 hours, second term. Professor CARPENTER

(Given in 1894-5.)

See also English I: Laws of Prose Composition in Modern English. M. and W. at 11.30. Professor PRICE.

GEOLOGY

JAMES FURMAN KEMP, A.B., E.M.....*Professor*
CHARLES ARTHUR HOLLICK, Ph.B.....*Tutor*
GILBERT VAN INGEN.....*Assistant*

General Statement

Of the courses offered by the department, Course II is required of all third-year students in the School of Mines, except those in the courses of Architecture and Electrical Engineering; Course III of fourth-year students in the courses of Mining Engineering, Metallurgy, Chemistry, and Geology; Course IV of third-year students in the course of Architecture, who also attend lectures on building stone in Course III; and Courses VI and VII of all students in the course of Geology. Course V is required of second-year students in the courses of Mining Engineering, Metallurgy, Chemistry, and Geology.

Course I is elective for Juniors and Seniors in the School of Arts; Course II for Seniors in the same school who have not taken I; Course III for Seniors in the same school who have had I or II or an equivalent, and for candidates for the A.M. degree as a minor subject; and Courses VI to XIII for candidates for the A.M and Ph.D. degrees.

Courses

I—GENERAL GEOLOGY—First term, physical geology, with practical work in the rock collections under the lithological part of the subject; second term, stratigraphical and historical geology, involving laboratory work with type fossils and collections illustrating the geology of the United States. Text-book: Le Conte's Elements of Geology. 2 hours lectures, including laboratory work. Mr. HOLLICK

II—GENERAL GEOLOGY—A more elaborate discussion of the subjects treated in Course I. Text-book: Dana's Manual of Geology. 3 hours lectures. Professor KEMP

III—ECONOMIC GEOLOGY—First term, a discussion of the general features and formation of ore bodies, followed by a description of the deposits of the ores of iron, copper, lead, zinc, silver, gold, and the lesser metals, with especial reference to North America; second term, a description of the distribution and occurrence of coal, petroleum, natural gas, asphalt, building stone, water supply,

salines, and minor minerals. Text-book : Kemp's Ore Deposits of the United States, and lecture notes privately printed. 3 hours lectures and conferences. Professor KEMP

IV—GENERAL GEOLOGY—Preceded by short course in mineralogy under the department of Mineralogy. 2 hours lectures, first term

V—PETROGRAPHY—A short course in the microscopic study of rocks. Follows Mineralogy VI. 2 lectures and 1 afternoon two months of the second term. Professor KEMP

VI—PETROGRAPHY—A discussion of the microscopic structure and mineralogical composition of the crystalline rocks, and of metamorphism. Pre-requisite : Optical Mineralogy. 2 hours lectures, 4 hours laboratory. Professor KEMP

VII—INVERTEBRATE PALÆONTOLOGY—A general description of invertebrate fossils, following the biological sequence. Pre-requisite : Course I, department of Biology. Text-books : Zittel's Handbuch der Palaeontologie, vol. i, and Nicholson's Manual of Palæontology. 2 hours lectures, 4 hours laboratory. Mr. HOLLICK

VIII—ADVANCED PETROGRAPHY—Supplementary to Course V, with an additional year of 8 hours laboratory work and reading. Professor KEMP

IX—PALÆOBOTANY—Study of fossil plants, following the biological sequence. Pre-requisite : Course I, department of Botany. Text-book : Zittel's Handbuch der Palaeontologie, vol. ii, and Solms-Laubach's Palæobotany. 1 hour lecture or conference, 4 hours laboratory or reading for two years. Mr. HOLLICK

X—PETROGRAPHY OF THE SERPENTINES IN THE VICINITY OF NEW YORK.—Field and laboratory work, not less than 8 hours a week for two years. Professor KEMP

XI—GEOLOGY OF RESTRICTED AREAS IN EASTERN NORTH AMERICA—Field and laboratory work, not less than 8 hours a week for two years. Professor KEMP and Mr. HOLLICK

XII—PETROGRAPHY OF SUITES OF IGNEOUS OR METAMORPHIC ROCKS FROM VARIOUS LOCALITIES—Field and laboratory work, not less than 8 hours a week for two years. Professor KEMP

XIII—INVESTIGATION OF SOME SERIES OF ORE-DEPOSITS—Field and laboratory work, not less than 8 hours a week for two years. Professor KEMP

XIV—STUDY OF THE FLORA OF CERTAIN GEOLOGICAL HORIZONS—Pre-requisite : Course V, department of Botany. Field and laboratory work, not less than 8 hours a week for two years. Mr. HOLLICK

Equipment

The department of Geology has its museum and lecture room on the top floor of the Fourth Avenue building. The museum affords exceedingly complete,

illustrative series of specimens in stratigraphical and economic geology and in palæontology. It is open from eight to six to students and visitors. The collections of fossil fish and fossil plants are especially rich.

The laboratories and offices comprise the parlor and basement floor of the dwelling house, No. 52 East 49th Street, opposite the college. The equipment includes very complete collections of rocks and thin sections, some thousands in all, for work in microscopic petrography, eight petrographical microscopes, micro-spectroscope, micro-camera, cameras for out-door photography, and grinder for making thin sections. The department has also placed with it the geological library of the late Professor Newberry, containing many rare volumes and pamphlets.

The college has an arrangement with the American Museum of Natural History which secures for advanced students especial privileges in its collections. As these contain the valuable and unique collection of Palæozoic fossils made by James Hall, the privilege is of especial consequence to students of palæontology.

Summer School

The trustees of the college have made an appropriation for a summer school in geology, which defrays the expenses of a small squad of advanced students for about one month each summer, with the professor of geology. During the college year, excursions are offered to points of geological interest near New York, on all Saturdays and holidays of the fall and spring. Few other localities afford so extensive and so accessible exposures as the vicinity of New York.

GERMANIC LANGUAGES AND LITERATURE

HJALMAR HJORTH BOYSEN, Ph.D.....	<i>Professor</i>
WILLIAM HENRY CARPENTER, Ph.D.....	<i>Adjunct Professor</i>
EUGENE HOWARD BABBITT, A.B.....	<i>Instructor</i>
HERMAN J. SCHMITZ, A.M.....	<i>Lecturer 1893-4</i>

General Statement

Courses A, B, I, II, III, IV, V, VI, VII, VIII, IX, and X are open to all University students; Courses I, II, III, IV, and VII also to Juniors in the School of Arts; Courses XI and XII to advanced students only. Provision will be made for students desiring to begin German

Courses

A—GERMAN—Whitney's Grammar; Buchheim's Heine's Prosa; Riehl's Kulturgeschichtliche Novellen. 3 hours a week. Mr. BABBITT

B—GERMAN—Goethe, Schiller, and Lessing. 3 hours a week. Professor BOYESEN

Course B is prescribed for Sophomores who have taken Course A in their Freshman year, unless Chemistry I is substituted in its place.

I—GOETHE'S FAUST—First and second parts, with commentary. Professor BOYESEN

W. and F. at 9.30

II—HISTORY OF GERMAN LITERATURE—Lectures. Professor BOYESEN

M. at 9.30 and Tu. at 2.30

III—SELECTED HISTORICAL PROSE, chiefly from Freytag's *Bilder aus der Deutschen Vergangenheit*—Reading at sight. Mr. BABBITT

M. at 2.30 and W. 3.30

IV—HISTORY OF THE GERMAN LANGUAGE—Lectures. Professor CARPENTER

M. and W. at 2.30

V—ICELANDIC—Elementary course. Sweet, *Icelandic Primer*; Vigfusson and Powell, *Icelandic Prose Reader*. Professor CARPENTER

M. and W. at 12.30

VI—GOTHIC—Wright, *Primer of the Gothic Language*; Braune, *Gothic Grammar*; Bernhardt, *Die Gothische Bibel*. Professor CARPENTER

Tu. and Th. at 12.30

VII—MIDDLE HIGH GERMAN—Wright, *Middle High German Primer*; Paul, *Mittelhochdeutsche Grammatik*; Weinhold, *Mittelhochdeutsches Lesebuch*. Professor CARPENTER

M. and W. at 3.30

VIII—OLD HIGH GERMAN—Wright, *Old High German Primer*; Braune, *Althochdeutsche Grammatik*, *Althochdeutsches Lesebuch*. Professor CARPENTER

Tu. and Th. at 3.30

IX—GERMANIC MYTHOLOGY—Lectures. Professor CARPENTER. (Second term only.)

Th. at 2.30

X—HISTORY OF DANISH AND NORWEGIAN LITERATURE. Professor BOYESEN

W. at 2.30

XI—SEMINAR: Critical study of special periods in German literature. 1 hour weekly. Professor BOYESEN

Hour to be arranged

XII—OLD NORSE OR ICELANDIC LITERATURE—Lectures. Professor BOYESEN

M. and W. at 2.30

GREEK

HENRY DRISLER, LL.D.....	<i>Jay Professor</i>
AUGUSTUS CHAPMAN MERRIAM, A.M., Ph.D.....	<i>Professor</i>
EDWARD DELAVAN PERRY, Ph.D.....	<i>Professor of Sanskrit Attached to the Greek Department</i>
CLARENCE HOFFMAN YOUNG, A.M., Ph.D.....	<i>Instructor</i>

General Statement

There are two parallel courses in this department, one of the Greek language and literature, and one of Greek archæology and epigraphy. In both courses provision is made for students in the undergraduate department or the college proper, and for the students in the graduate department and the School of Philosophy. The courses designated in the scheme of study as A and B are intended for the younger classes and are designed to enlarge and deepen the knowledge of the fundamental principles of the language and at the same time to awaken the minds of the students to a perception of the beauties of the literature. With the Junior year the study of Greek is made elective, and in that year and in the Senior year the instruction deals less with grammatical principles, and enters more widely into the thought of the authors read, the artistic construction of both poetry and prose, the public and private life, the art and archæology, the mythology and history of the Grecian people.

Course A is for the Freshman Class, Course B for the Sophomore; Courses I, II, and III are intended for Juniors, with permission to deserving students to select from the Senior courses; the remaining courses, from IV to XIV inclusive, are for members of the graduating class, for graduates and other candidates for the degree of A.M. and Ph.D.

Courses

A—First half-year, 3 hours. Homer (Merriam's *Phæaciads*). Greek Prose Composition. Second half-year, 3 hours. Lysias (Shuckburgh's *Select Orations*) or Andocides (Marchant's). Greek Prose Composition. Dr. YOUNG

Course A is prescribed for Freshmen.

B—First half-year, 3 hours. *Alcestis* and *Medea* of Euripides (Jerram's *Alcestis*, Allen's *Medea*). Second half-year, 3 hours. Plato's *Protagoras* (Towle's). Exercises in writing Greek, optional. Professor PERRY

Course B is prescribed for Sophomores, unless chemistry is substituted for it.

Additional instruction will be given in both A and B at the desire of the student.

Courses I, II, III, IV, V, VI, VII, IX, and X are open to all university students.

Courses VIII, XI, XII, XIII, and XIV are open to advanced students only.

I—First half-year, 3 hours. *Ajax* and *Antigone* of Sophocles (Jebb's *Ajax*, Humphrey's *Antigone*). Second half-year, 3 hours. Selections from Thucydides (editions of Morris, Smith, Fowler, Frost, Lamberton). Exercises in writing Greek, optional. Professor PERRY

M., Tu., and Th. at 10.30

II—Æschylus (Prickard's *Prometheus and Persæ*). Isocrates (Sandys's *Panegyricus*). 2 hours. Dr. YOUNG

Tu. and F. at 11.30

III—LECTURES ON THE GREEK DRAMA—Professor MERRIAM

W. at 10.30

Courses I, II, and III are elective for Juniors.

* IV—Pindar (Gildersleeve's); Theocritus (Snow's); Æschylus, or the *Frogs* of Aristophanes; Demosthenes, *De Corona* (Tyler's), or Æschines. Richardson's Exercises in writing Greek, optional. Professor MERRIAM

M. and W. at 11.30

* V—LECTURES ON THE ELEGIAC, IAMBIC, AND MELIC POETS, with readings from the extant fragments—Professor MERRIAM

Th. at 11.30

* VI—NEW TESTAMENT—Epistles (Westcott and Hort's text). Dr. YOUNG

M. at 9.30

* VII—NEW TESTAMENT—Gospels and Acts (Westcott and Hort's text). Dr. YOUNG

W. at 12.30

For additional courses in New Testament Greek see below.

* VIII—THE ATTIC ORATORS AND THE HISTORY OF ATTIC PROSE STYLE (Teubner text)—Greek composition. Professor MERRIAM

M. at 12.30 and Th. at 10.30

* VIIIA—THE TRAGIC POETS—Professor MERRIAM

M. and F. at 10.30

Archæology and Epigraphy

* IX—LECTURES ON THE HISTORY OF GREEK ART FROM THE MONUMENTS, illustrated by lantern-slides, photographs, and other reproductions—Professor MERRIAM

Tu. at 10.30

Course IX is open also to Juniors in the School of Arts.

* X—THE TOPOGRAPHY, MYTHOLOGY, AND MONUMENTS OF ANCIENT GREECE, with readings from Pausanias (Teubner text)—Professor MERRIAM

W. at 9.30

* XI—THE DIALECTS OF GREECE FROM INSCRIPTIONS—Cauer's *Delectus Inscriptionum Græcarum*—Professor MERRIAM

F. at 11.30

This course will not be given in 1893-4.

* XII—HISTORICAL INSCRIPTIONS AND THE HISTORY OF THE ATTIC ALPHABETS—Dittenberger's *Sylloge Inscriptionum Græcarum*, Part I, with practical exercises from a full series of "squeezes" from Attic inscriptions. Professor MERRIAM

F. at 11.30

* XIII—INSCRIPTIONS RELATING TO FORMS OF GOVERNMENT, RELIGION, AND PRIVATE LIFE—Dittenberger's *Sylloge Inscriptionum Græcarum*, Part II, Professor MERRIAM

F. at 11.30

* XIV—ARCHAIC INSCRIPTIONS AND THE ALPHABETS OF GREECE, with practical exercises on representative "squeezes"—Roberts' *Introduction to Greek Epigraphy*, Roehl's *Inscriptiones Græcæ Antiquissimæ*

F. at 11.30

A selection will be made for 1893-4 from Courses XII, XIII, and XIV.

Courses at the Union Theological Seminary

The following courses (possibly subject to some modifications), to be given in 1893-4 at the Union Theological Seminary, 700 Park Avenue, are open to University students in Columbia College :

I—NEW TESTAMENT GREEK

I—October to December, 1893

I—GRAMMAR OF NEW TESTAMENT GREEK, with readings from the Gospels of Matthew and Mark—Professor VINCENT

M. at 11.35 and W. at 10.30

II—GOSPEL OF MARK, with Exegesis—Professor VINCENT

Th. at 11.35 and F. at 10.30

III—GOSPEL OF JOHN, with Exegesis—Professor VINCENT

M. at 10.30 and F. at 9.25

II—January to April, 1894

IV—GRAMMAR OF NEW TESTAMENT GREEK, continued, with readings in Luke and Acts—Professor VINCENT

M. at 10.30

V—GOSPEL OF LUKE, with Exegesis—Professor VINCENT

W. at 10.30

VI—PAULINE EPISTLES (Corinthians, Galatians, or Epistles of the Imprisonment), with Exegesis—Professor VINCENT

M. and F. at 11.35

VII—EPISTLE TO THE ROMANS, with Exegesis—Professor VINCENT

Tu. at 11.35 and W. at 9.25

VIII—HISTORICAL AND CRITICAL INTRODUCTION TO THE NEW TESTAMENT—Professor VINCENT

F. at 10.30

Lectures Open to the Public

The courses of lectures which are designated by a star (*) are open to the public, men and women alike, on payment of an auditor's fee. No auditor will be admitted to any course without the consent of the instructor, previously obtained. Auditors do not have and cannot receive any University recognition.

Equipment

The department is well equipped with maps, plans, and models. It possesses a large series of photographs and photographic reproductions of Greek monuments, localities, and sculpture, books of illustrations, lantern slides, and a few casts and electrotypes, for the illustration of ancient monuments, art, and daily life, and these are continually drawn upon wherever opportunity offers in reading or lectures, that the literature and the art may each complement the other. The Avery Collection of the library offers an unusual opportunity for the further study of these subjects, with its richly illustrated works on art and archæology, as well as architecture, and forms an invaluable subsidiary to the department. This is again reinforced by the facilities offered through the arrangement between the college and the Metropolitan Museum of Art, by which our students are granted free access to all the museum collections for study and comparison. The department also possesses in its study a special library of selected books which are placed at the disposal of university students; and the general library contains all the important serial publications, issued abroad and at home, in the field of philology and archæology. In Greek epigraphy its collection is almost complete. This is supplemented in the department by an extensive series of "squeezes" from the marbles in many parts of Greece and in the British Museum, by means of which the study becomes more scientific than from published fac-similes.

GYNECOLOGY

GEORGE MONTGOMERY TUTTLE, M.D.	<i>Professor</i>
HERSEY GOODWIN LOCKE, M.D.	<i>Chief of Clinic</i>
GEORGE W. JARMAN, M.D.	<i>Clinical Assistant</i>
GUSTAV W. BRATENAH, M.D.	<i>Clinical Assistant</i>

Courses

I—THE PRINCIPLES AND PRACTICE OF GYNECOLOGY—Didactic lectures; 3 hours a week from March 15th to the end of the academic year. Professor TUTTLE

Required, in the second and third years, of candidates for the degree of M.D.

II—CLINICAL INSTRUCTION AT THE VANDERBILT CLINIC.—1 hour a week throughout the academic year. Professor TUTTLE

F. at 3 P.M.

Required, in the third year, of candidates for the degree of M.D.

III—PRACTICAL INSTRUCTION IN DIAGNOSIS, TREATMENT, AND THE USE OF INSTRUMENTS, INCLUDING ELECTRO-THERAPEUTICS—6 lessons for each student, at the Vanderbilt Clinic. Dr. LOCKE

Optional, in the third year, for candidates for the degree of M.D.

IV—HOSPITAL CLINICS IN OPERATIVE GYNECOLOGY

Roosevelt Hospital, McLane Operating Theatre

To these clinics the students are invited in sections, to witness the various surgical operations of gynecology. Professor TUTTLE

Tu., Th., and Sat. at 2.30 P.M., throughout the academic year

Optional, in the third year, for candidates for the degree of M.D.

The McLane Operating Theatre of the Roosevelt Hospital

This is upon the hospital grounds immediately opposite the College of Physicians and Surgeons, and is one of the most thoroughly equipped buildings in this country for instruction in the surgery of gynecology.

The cases upon which operations are demonstrated are taken from the gynecological wards of the Roosevelt Hospital, which are under the exclusive direction of the Professor of Gynecology, and the cases in which are all available for the instruction given by him.

HISTORY AND POLITICAL PHILOSOPHY

JOHN WILLIAM BURGESS, Ph.D., LL.D.....	<i>Professor</i>
MUNROE SMITH, A.M., J.U.D... ..	<i>Professor</i>
FRANK JOHNSON GOODNOW, A.M., LL.B.....	<i>Professor</i>
ADOLPHE COHN, A.M.....	<i>Professor</i>
HERBERT LEVI OSGOOD, Ph.D.....	<i>Adjunct Professor</i>
WILLIAM ARCHIBALD DUNNING, Ph.D.....	<i>Adjunct Professor</i>
FREDERICK WALLINGFORD WHITRIDGE, A.M., LL.B.....	<i>Lecturer</i>
ABRAM CHARLES BERNHEIM, LL.B., Ph.D.....	<i>Prize Lecturer</i>
FREDERIC BANCROFT, Ph.D.....	<i>Prize Lecturer</i>
FRANK MOORE COLBY, A.M.....	<i>Lecturer</i>

General Statement.

The two groups of courses in this department, history and political philosophy, are intended partly for undergraduates and partly for those seeking the higher degrees. Course A is required for Sophomores in the School of Arts, and Course B for Juniors. Courses III, IV, V, and VI are elective for Juniors only. For university students who desire a general view of history, either as an element in liberal culture or as preliminary to special work in law or political science, the courses particularly recommended are VII, VIII, XVI, and XXVI. These courses, together with IX, X, XIX, XX, and XXI, are open to Seniors in the School of Arts, and other candidates for the degree

of A.B. Course IX will be given only in alternate years, beginning 1895-6. Courses XVII and XXX are open only to advanced students who are qualified to do special detailed work in the respective subjects. Attention is particularly called to the following courses, which, while given in other departments, deal with subjects which constitute an integral part of the domain of history; history of European law; general history of diplomacy; history of American diplomacy; and the historical courses in the department of Economics and Social Science.

Courses in History

A (I)—MEDIÆVAL AND MODERN HISTORY—Recitations on Myer's Outlines with supplementary lectures. 2 hours. Mr. COLBY

W. at 10.30, or M. at 1.30 and W. at 12.30

B (II)—EUROPEAN HISTORY SINCE 1815—Lectures and recitations, based on Müller's Political History of Recent Times. 2 hours, first term. Professor DUNNING and Mr. COLBY

M., or Tu., and W. at 1.30

III—ROMAN HISTORY—Recitations and reading. 2 hours, first term. Professor MUNKOE SMITH

IV—ENGLISH HISTORY—Recitations and reading. 1 hour. Professor OSGOOD

V—AMERICAN HISTORY—Recitations and reading. 1 hour. Professor DUNNING

(VI)—HISTORICAL AND POLITICAL GEOGRAPHY—1 hour. Professor GOODNOW

VII—GENERAL POLITICAL AND CONSTITUTIONAL HISTORY OF EUROPE—Lectures and private reading. 4 hours, first term. Professor OSGOOD

M., Tu., W., and Th. at 1.30

VIII—POLITICAL AND CONSTITUTIONAL HISTORY OF ENGLAND—Lectures and private reading. 2 hours. Professor OSGOOD

Tu. and Th. at 3.30

IX—RELATIONS OF ENGLAND AND IRELAND—Lectures. 2 hours, first term (hours to be arranged). Professor DUNNING

X—HISTORY OF FRANCE SINCE 1830—Lectures and private reading. 1 hour. Professor COHN

XV—SEMINARIUM IN EUROPEAN HISTORY—1 hour. Professor OSGOOD

XVI—POLITICAL AND CONSTITUTIONAL HISTORY OF THE UNITED STATES—Lectures and private reading. 4 hours, second session. Professor BURGESS

M., Tu., W., Th. at 1.30

XVII—POLITICAL HISTORY OF THE COLONIES AND OF THE AMERICAN REVOLUTION—Investigation course. 2 hours (hours to be arranged). Professor OSGOOD

XVIII—THE UNITED STATES DURING CIVIL WAR AND RECONSTRUCTION—Lectures and private reading. 2 hours, second term (hours to be arranged). Professor DUNNING

XIX—HISTORY OF THE UNITED STATES FROM 1850 TO 1861—Lectures. 1 hour (hour to be arranged). Dr. BANCROFT

XX—POLITICAL HISTORY OF THE STATE OF NEW YORK—Lectures. 2 hours, second term. Mr. WHITRIDGE

XXI—CHARTER AND POLITICAL HISTORY OF NEW YORK CITY—Lectures. 2 hours, second session (hours to be arranged). Dr. BERNHEIM

XXV—SEMINARIUM IN EARLY AMERICAN HISTORY—1 hour. Professor OSGOOD

Courses in Political Philosophy

XXVI—GENERAL HISTORY OF POLITICAL THEORIES—Lectures, with references to Janet, *Histoire de la Science Politique*; Bluntschli, *Geschichte der neueren Staatswissenschaften*; and Pollock, *History of the Science of Politics*. 3 hours. Professor DUNNING

Tu., W., and F. at 10.30

XXVII—AMERICAN POLITICAL PHILOSOPHY—Assigned reading, essays, and discussions. 1 hour (or 2 hours each alternate week). Professor DUNNING

XXX—SEMINARIUM IN POLITICAL PHILOSOPHY—1 hour. Professor DUNNING

Equipment

The department employs in its work the best German historical maps, and one of the four largest relief globes ever made. In the special library of political science, numbering 60,000 volumes, are to be found all the most valuable works for either general reading or special research; and this is supplemented by the rich collections of the Astor and Lenox Libraries, as well as those of the Bar Association and the New York and Long Island Historical Societies, all of which are readily accessible to students of the department. Under the auspices of the Academy of Political Science, to which advanced students are eligible as members, opportunities are given for the discussion of questions of interest as presented in papers by specialists.

LARYNGOLOGY

(Including Diseases of the Larynx, Pharynx, and Nose)

GEORGE MOREWOOD LEFFERTS, M.D.....	<i>Clinical Professor</i>
D. BRYSON DELAVAN, M.D.....	<i>Chief of Clinic</i>
GEORGE A. RICHARDS, M.D.....	<i>Clinical Assistant</i>
WILLIAM K. SIMPSON, M.D.....	<i>Clinical Assistant</i>
J. D. ASPINWALL, M.D.....	<i>Clinical Assistant</i>
CHRISTOPHER J. COLLES, M.D.....	<i>Clinical Assistant</i>
WILLIAM HALLOCK PARK, M.D.....	<i>Clinical Assistant</i>
JAMES P. McEVoy, M.D.....	<i>Clinical Assistant</i>
JOHN H. BILLINGS, M.D.....	<i>Clinical Assistant</i>
JOSEPH F. PERKINS, M.D.....	<i>Clinical Assistant</i>
RICHARD FROTHINGHAM, M.D.....	<i>Clinical Assistant</i>
ALFONSO A. RICHARDSON, M.D.....	<i>Clinical Assistant</i>

I—CLINICAL LECTURES AT THE VANDERBILT CLINIC UPON THE DISEASES OF THE THROAT AND NOSE, WITH LARYNGOSCOPIC AND RHINOSCOPIC DEMONSTRATIONS.—1 hour a week for twenty-three weeks. Professor LEFFERTS

Tu. at 2 P.M.

Required, in the third year, of candidates for the degree of M.D.

II—DIAGNOSIS CLASSES IN THE DISEASES OF THE THROAT AND NOSE AT THE VANDERBILT CLINIC on Tuesdays at 2 P.M., from the completion of Course I to the close of the academic year. Preference as to admission to II is given to students who have attended Course III. 1 hour a week. Professor LEFFERTS

Optional, in the third year, for candidates for the degree of M.D.

III—PRACTICAL INSTRUCTION AT THE VANDERBILT CLINIC IN THE USE OF THE LARYNGOSCOPE AND RHINOSCOPE UPON THE "PHANTOM," AND UPON ADULT PATIENTS—The course is based upon the principle of short preliminary explanations, followed by practical work by the student, directly and personally supervised by the instructor. 6 lessons for each student. Dr. DELAVAN

Optional, in the third year, for candidates for the degree of M.D.

Equipment

The department of Laryngology is equipped with a complete collection of the most approved modern instruments and appliances, by the best makers, for the diagnosis and treatment of the diseases of the throat and nose, and for the giving of instruction therein.

Among other things may be mentioned: a complete collection of the modern electric illuminating apparatus for the examination of patients; the electric laryngoscope; apparatus for the trans-illumination of the accessory cavities of the face; dilators, canulæ, and other instruments, used in the treatment of laryngeal stenosis; operative instruments by Pfau of Berlin; twelve laryngoscopic

“phantoms,” by Bock of Leipsic, for exercising the students in the use of the various instruments preliminary to the examination of the living subject ; between one and two hundred anatomical models of the healthy and diseased larynx ; by Steiger of Leipsic, and Tobold of Berlin. Models of the normal larynx by Bock of Leipsic, and by Auzoux of Paris ; physiological models to illustrate the normal movements and the various paralyses of the vocal cords ; a diagrammatic model, to illustrate the mechanical interference of laryngeal neoplasms with the act of phonation ; photographs of the living larynx, in health and disease ; two hundred and eighty-seven water-color drawings by Wright of New York, of the pathological conditions of larynx, pharynx, naso-pharynx, and nasal passages. These are of large size to illustrate the clinical lectures. A collection of photogravures of frozen sections of the head, and of drawings and instruments, to illustrate the operation of intubation.

The pathological and anatomical museum of the department contains at present one hundred and eleven carefully prepared and mounted wet preparations of the larynx and its diseases. This collection is specially rich in the rarer specimens, such as benign neoplasms of the larynx, intrinsic and extrinsic, laryngeal cancer, and others.

LATIN

HARRY THURSTON PECK, Ph.D., L.H.D.....	<i>Professor</i>
JAMES C. EGBERT, Jr., A.M., Ph.D....	<i>Instructor</i>
NELSON G. MCCREA, Ph.D.....	<i>Tutor</i>
FREDERIC T. COOPER, A.M., LL.B.....	<i>Assistant</i>
EDWARD D. PERRY, Ph.D.....	<i>Professor of Sanskrit</i>

General Statement

Of the courses offered by the department, Courses A and B are required of all students of the Freshman class in the School of Arts ; Courses C and D are required of all students of the Sophomore class in the School of Arts who do not elect chemistry as a substitute ; Courses I, II, and III are elective for Juniors only ; Courses IV and XII are elective for both Juniors and Seniors. Courses VII, IX, and XV are elective for Seniors only. Courses V, VI, VIII, X, XI, XIII, XIV, and XVI are open to advanced students only, except by special permission of the head of the department.

Courses

A—THE LETTERS OF PLINY THE YOUNGER—Review of the Syntax of the Moods. Latin prose composition. 3 hours, first term. Dr. EGBERT and Mr. COOPER

B—THE ODES AND EPODES OF HORACE. Review of prosody. Latin prose composition. 3 hours, second term. Mr. COOPER

C—THE AGRICOLA AND GERMANIA OF TACITUS—Latin prose composition. 3 hours, first term. Dr. MCCREA

D—THE SATIRES AND EPISTLES OF HORACE—3 hours, second term. Dr. MCCREA

I—THE SATIRES OF JUVENAL—Lectures on the Roman satirists. 2 hours, first term. Dr. EGBERT

II—THE ANDRIA AND PHORMIO OF TERENCE—2 hours, second term. Dr. EGBERT

III—CICERO DE OFFICIIS—Lectures on Roman philosophy. 2 hours, second term. Dr. EGBERT

IV—LUCRETIUS DE RERUM NATURA—Lectures on the Epicurean philosophy. Preparation and criticism of papers. 2 hours. Professor PECK

V—THE CENA TRIMALCHIONIS OF PETRONIUS—Lectures on the Greek and Roman writers of fiction. 2 hours. Professor PECK

VI—ROMAN HISTORY: THE REIGN OF TIBERIUS. Reading and preparation of papers on the institutions of the Roman Empire. 2 hours. Dr. EGBERT

VII—FOUR PLAYS OF PLAUTUS—The comic metres. 2 hours. Dr. MCCREA.

VIII—LECTURES ON THE GREAT WRITERS OF ROMAN HISTORY: POLYBIUS, SALLUST, LIVY, TACITUS, SUETONIUS.—1 hour. Dr. EGBERT

IX—THE PSEUDO-VERGILIAN POEMS (Culex, Copa, Ciris, Moretum, and Catalecta)—2 hours. Professor PECK

X—LATIN SEMINARY—Subject: The Nature of Latin Prosody, with exercises in Latin versification. Twice monthly. Professor PECK

XI—LATIN EPIGRAPHY—Inscriptions of the imperial period. 1 hour. Dr. EGBERT

XII—RAPID READING OF THE WHOLE OF HORACE—2 hours. Professor PECK

XIII—LECTURES ON LATIN GRAMMAR—Phonology and Morphology. 2 or 3 hours. Professor PERRY

This course will not be given in 1893-4.

XIV—LATIN PALÆOGRAPHY AND HISTORY OF THE DIPLOMATIC CRITICISM OF TEXTS—1 hour. Professor PECK

XV—THE INSTITUTIONES OF GAIUS—1 hour, from November to April. Professor PECK

XVI—LATIN PROSE COMPOSITION—2 hours. Professor PECK

Equipment

The library is unusually rich in early and rare editions of the Latin classics, while there is an excellent selection of recent works on both the Latin language and literature, and on classical philology in general. Especially well represented are the departments of archæology, epigraphy, palæography, Roman history, and Roman law. A collection of casts, photographs, and maps illus-

trative of the art, architecture, and topography of Rome is now in course of formation.

LAW

General Statement

The courses offered in Law are here indicated. For full information as to the course leading to the degree of LL.B. consult the statement concerning the School of Law.

Municipal or Private Law

WILLIAM A. KEENER, A.M., LL.B.....	<i>Professor</i>
GEORGE M. CUMMING, A.B.....	<i>Professor</i>
FRANCIS M. BURDICK, A.M., LL.B.....	<i>Professor</i>
GEORGE W. KIRCHWEY, A.B.....	<i>Professor</i>
JOHN ORDRONAUX, LL.D.....	<i>Professor of Medical Jurisprudence</i>
GEORGE RICHARDS, A.B., LL.B.....	<i>Lecturer</i>
GEORGE F. CANFIELD, A.M., LL.B.	<i>Lecturer</i>
HENRY P. STARBUCK, A.B., LL.B.....	<i>Lecturer</i>
HERBERT GREEN, A.B., LL.B.....	<i>Lecturer</i>
CHARLES T. TERRY, A.B., LL.B.....	<i>Prize Lecturer</i>

Courses

- I—CONTRACTS—3 hours weekly. Professor KEENER
- II—REAL AND PERSONAL PROPERTY—3 hours weekly. Professor KIRCHWEY
- III—TORTS—2 hours weekly. Professor BURDICK
- IV—LAW OF PERSONS AND DOMESTIC RELATIONS—2 hours weekly until February. Professor CUMMING
- V—COMMON LAW PLEADING AND PRACTICE—2 hours weekly from February to June. Mr. STARBUCK
- VI—ELEMENTS OF JURISPRUDENCE AND EQUITY—1 hour weekly. Professor KEENER
- VII—CONTRACTS AND QUASI-CONTRACTS—3 hours weekly. Professor CUMMING
- VIII—EQUITY.—3 hours weekly. Professor KEENER
- IX—REAL AND PERSONAL PROPERTY—3 hours weekly. Professor KIRCHWEY
- X—AGENCY—2 hours weekly. Professor BURDICK
- XI—BAILMENTS AND CARRIERS—2 hours weekly. Professor CUMMING

XII—SALES OF PERSONAL PROPERTY—2 hours weekly. Professor BURDICK

XIII—CODE PRACTICE—2 hours weekly from February to June. Mr. GREEN

XIV—EQUITY PLEADING AND PRACTICE—2 hours weekly until February. Mr. TERRY

XV—INSURANCE—2 hours weekly, February to June. Mr. RICHARDS

XVI—MEDICAL JURISPRUDENCE—3 hours weekly until January. Professor ORDRONAU

XVII—CODE PLEADING AND PRACTICE—2 hours weekly. Mr. GREEN

XVIII—CORPORATIONS—2 hours weekly. Professor CUMMING

XIX—EQUITY—2 hours weekly. Professor KEENER

XX—EVIDENCE—2 hours weekly. Professor KIRCHWEY

XXI—NEGOTIABLE PAPER—2 hours weekly. Professor BURDICK

XXII—PARTNERSHIP—2 hours weekly. Professor BURDICK

XXIII—SURETYSHIP AND MORTGAGE—2 hours weekly. Professor CUMMING

XXIV—WILLS AND ADMINISTRATION—2 hours weekly. Professor KIRCHWEY

XXV—DOCTRINES PECULIAR TO NEW YORK LAW—1 hour weekly. Mr. CANFIELD

Public Law and Jurisprudence

JOHN WILLIAM BURGESS, Ph.D., LL.D.....	<i>Professor</i>
MUNROE SMITH, A.M., J.U.D.....	<i>Professor</i>
FRANK JOHNSON GOODNOW, A.M., LL.B.....	<i>Professor</i>
JOHN BASSETT MOORE, A.B.....	<i>Professor</i>
ABRAM CHARLES BERNHEIM, LL.B., Ph.D.....	<i>Prize Lecturer</i>

General Statement

The courses in this department fall into two divisions: Public Law and Jurisprudence. The purpose of the courses in public law is to give a complete general view of international, constitutional, administrative, and criminal law. They serve primarily to supplement the courses in the department of History and Economics, and to give with them a complete system of political science. In the second place, they supplement the courses offered by the department of Private Law, constituting with these a well-rounded legal curriculum. The courses in international, constitutional, and administrative law are also recommended to journalists, students of philosophy and theology, and in general to all who desire to understand the organization and working of our governmental

system. The courses in Criminal Law and in International Private Law (conflicts of private law) are more professional in their character, and are chiefly intended for law students.

The courses in Roman Law and Comparative Jurisprudence, while constituting an integral portion of a complete legal education, will be found useful to all those who desire a general comprehension of the principles of private law rather than a professional training in its details. The introductory course upon the Roman Law (XXI) and that upon European Legal History (XXIII) are especially recommended to students of history, economics, and philosophy.

Courses in Public Law

A—Constitutional Law

I—COMPARATIVE CONSTITUTIONAL LAW OF THE PRINCIPAL EUROPEAN STATES AND THE UNITED STATES—Lectures, 3 hours weekly, after the first of December. Professor BURGESS

M., Tu., and W. at 2.30

II—COMPARATIVE CONSTITUTIONAL LAW OF THE SEVERAL COMMONWEALTHS OF THE AMERICAN UNION. 10 lectures, in May. Dr. BERNHEIM

V—SEMINARIUM IN THE CONSTITUTIONAL LAW OF THE UNITED STATES—Investigation and discussion. 2 hours weekly (hours to be arranged) after the first of December. Professor BURGESS

The courses on the Constitutional History of Europe, England, and the United States (cf. courses in History) are regarded as a necessary introduction to the above courses on Constitutional Law.

B—International Law

VI—HISTORY OF DIPLOMACY—Lectures, 2 hours weekly, first session. Professor MOORE

Th. and F. at 2.30

VII—HISTORY OF AMERICAN DIPLOMACY—Lectures, 2 hours weekly, second session. Professor MOORE

Th. and F. at 2.30

VIII—INTERNATIONAL LAW—Lectures, two hours weekly. Professor MOORE

M. and Tu. at 11.30

X—SEMINARIUM IN INTERNATIONAL LAW—Hours to be arranged. Professor MOORE

C—Criminal Law

XI—CRIMINAL LAW, INCLUDING THE CONFLICT OF PENAL LAWS, AND EXTRADITION—Lectures, 2 hours weekly. Professor MOORE

Th. and F. at 11.30

D—Administrative Law

XVI—COMPARATIVE ADMINISTRATIVE LAW—Lectures, 2 hours weekly.
Professor GOODNOW

M. and W. at 4.30

XVII—LAW OF MUNICIPAL CORPORATIONS—Lectures, 2 hours weekly,
first session. Professor GOODNOW

Tu. and Th. at 9.30

XVIII—LAW OF TAXATION—Lectures, 2 hours weekly, second session.
Professor GOODNOW

Tu. and Th. at 9.30

XX—SEMINARIUM IN ADMINISTRATIVE LAW—Hours to be arranged.
Professor GOODNOW

Courses in Jurisprudence

XXI—ROMAN LAW—Sohm's Institutes of Roman Law, supplemented by
lectures. 2 hours weekly, first session. Professor MUNROE SMITH

XXII—ROMAN LAW—Discussion of selected cases from the Digest of
Justinian. 2 hours weekly, second session. Professor MUNROE SMITH

XXIII—HISTORY OF EUROPEAN LAW (primitive Aryan, old German, and
Frankish law; the canon law: the reception of Justinian law in mediæval
Europe; the reaction against the Roman Law, canon and civil, and the move-
ment toward national codification)—Lectures, 2 hours weekly. Professor
MUNROE SMITH (1895-96, and alternate years following)

Th. and F. at 1.30

XXIV—COMPARATIVE JURISPRUDENCE—Lectures and discussions, 2 hours
weekly. Professor MUNROE SMITH (1894-95, and alternate years following)

W. at 11:30 and 1:30

XXV—INTERNATIONAL PRIVATE LAW (conflicts of private law)—Lectures
and discussion of cases, 1 hour weekly. Professor MUNROE SMITH

Th. at 11.30

XXIX, XXX—SEMINARIA IN LEGAL HISTORY AND COMPARATIVE LEGIS-
LATION—Hours to be arranged. Professor MUNROE SMITH

MATERIA MEDICA AND THERAPEUTICS

GEORGE L. PEABODY, M.D. *Professor*

Courses

Instruction in this department is both didactic and clinical

I—The didactic course embraces general therapeutic considerations; modes
of administering drugs; the individual drugs used in treating disease, their
physiological effects and therapeutic uses, and the toxicological effects of such

of them as are poisons ; remedial measures other than the use of drugs, including electricity, dietetics, the use of water (including bathing and the administration of mineral waters); physical exercise, and the like

The department has a full collection of all the drugs lectured upon, as well as of their important preparations. After each lecture every student has an opportunity of examining specimens of all the drugs and preparations that formed the subject of the lecture. Lectures, 3 hours a week. Professor PEABODY

Required, in the second and third years, of candidates for the degree of M.D.

II—The clinical instruction in therapeutics is given at the bedside in the wards of the New York Hospital

A large number of patients are presented to the class, and abundant opportunity is afforded of observing the modifications in the natural course of diseases which are produced by therapeutic procedures, including not only the action of drugs but also the effects of such remedial measures as cold baths, wet packs, electricity, and the like

Frequent opportunity is also given for the personal examination of patients by members of the class in attendance ; and the entire course of protracted diseases, with their variations in symptoms and physical signs as well as in their treatment, can thus be observed

Facilities are also extended for witnessing the performance of autopsies in fatal cases as frequently as the hospital regulations permit

Twice a week for three months (M. and Th. at 2.30 P.M.). Professor PEABODY

Optional, in the second and third years, for candidates for the degree of M.D.

Medical students are recommended to attend this course in the third year only.

For the New York Hospital, see table of contents.

MATHEMATICS

JOHN HOWARD VAN AMRINGE, A.M., Ph.D., L.H.D.....	<i>Professor</i>
JASPER TILLEROU GOODWIN, A.M., LL.B.....	<i>Adjunct Professor</i>
THOMAS SCOTT FISKE, A.M., Ph.D.....	<i>Instructor</i>
JAMES MACLAY, C.E.....	<i>Tutor</i>
EDWIN MORTIMER BLAKE, E.M., Ph.D.....	<i>Assistant</i>
ARNON LYON SQUIERS, A.B.....	<i>Assistant</i>

General Statement

Of the courses offered by the department, Courses I and II are required of Freshmen in the School of Arts ; Course III of Sophomores in the School of Arts ; Courses IV and V of all first-year students in the School of Mines, except those in the course of Architecture ; Courses VI and VII of first-year students in the course of Architecture ; and Course VIII of second-year students in the School of Mines in the Engineering courses

Courses IX-XIII are elective for Juniors and Seniors in the School of Arts, and Courses XI, XII, and XIV-XXIV for candidates for the A.M. and Ph.D. degrees

Courses

I—GEOMETRY, VOLUMETRIC AND SPHERICAL (Davies' Legendre, Books 6-9)—3 hours, first term. Professor GOODWIN

II—ALGEBRA FROM QUADRATICS (Peck's)—3 hours, second term. Professor GOODWIN

III—TRIGONOMETRY, PLANE, ANALYTICAL, AND SPHERICAL, AND MENSURATION (Davies' Legendre)—2 hours. Professor GOODWIN

IV—TRIGONOMETRY (same as Course III)—4 hours, first term. Professor GOODWIN

V—ALGEBRA (Peck's) FROM SERIES, AND ANALYTICAL GEOMETRY (Wentworth's) TO THE HYPERBOLA—4 hours, second term. Professor GOODWIN

VI—SHORT COURSE IN TRIGONOMETRY (analytical) AND ANALYTICAL GEOMETRY—2 hours, first term. Professor GOODWIN

VII—SHORT COURSE IN DIFFERENTIAL AND INTEGRAL CALCULUS—2 hours, second term. Professor GOODWIN

VIII—ANALYTICAL GEOMETRY (Wentworth's) FROM THE HYPERBOLA, AND DIFFERENTIAL AND INTEGRAL CALCULUS (Osborne's)—4 hours. Professor VAN AMRINGE

IX—ANALYTICAL GEOMETRY (Wentworth's)—3 hours. Professor VAN AMRINGE

X—GENERAL THEORY OF EQUATIONS (Burnside and Panton's treatise)—2 hours. Mr. MACLAY

XI—SOLID ANALYTICAL GEOMETRY (C. Smith's)—3 hours, first term. Mr. MACLAY

XII—HIGHER PLANE CURVES (Salmon's)—3 hours, second term. Mr. MACLAY

XIII—DIFFERENTIAL AND INTEGRAL CALCULUS (Osborne's)—3 hours. Professor VAN AMRINGE

XIV—ADVANCED DIFFERENTIAL AND INTEGRAL CALCULUS (based on Williamson's treatises)—3 hours. Professor VAN AMRINGE and Mr. MACLAY

XV—GENERAL DIFFERENTIAL EQUATIONS (based on Johnson's treatise)—3 hours, first term. Professor VAN AMRINGE and Dr. BLAKE

XVI—PARTIAL DIFFERENTIAL EQUATIONS (based on Goursat's *Leçons sur l'équations aux dérivées partielles*)—3 hours, second term. Professor VAN AMRINGE and Dr. BLAKE

XVII—THEORY OF INVARIANTS (based on treatises of Salmon and Clebsch)—3 hours, first term. Dr. FISKE

XVIII—THEORY OF SUBSTITUTIONS (based on Cole's edition of Netto)—3 hours, second term. Dr. FISKE

XIX—GENERAL THEORY OF FUNCTIONS (based on Forsyth)—3 hours, first term. Dr. FISKE

XX—ELLIPTIC FUNCTIONS (based on Halphen)—3 hours, second term. Dr. FISKE

XXI—ABELIAN FUNCTIONS (based on Neuman and Laurent)—3 hours, first term. Dr. FISKE

XXII—AUTOMORPHIC FUNCTIONS (based in part on Klein's Elliptic-Modular Functions)—3 hours, second term. Dr. FISKE

XXIII—PROJECTIVE GEOMETRY (based on Cremona)—3 hours, first term. Mr. MACLAY

XXIV—THEORY OF CURVES IN SPACE AND SURFACES—3 hours, second term. Mr. MACLAY

Equipment

The models and apparatus contained in these collections are as follows :

A large number of models illustrating the various branches of geometry, synthetic, analytical, and descriptive, and many instruments for executing geometrical constructions upon blackboard and paper. A set of about fifty models of elementary solid and spherical geometry is intended to exemplify the diagrams contained in Davies' Legendre. These are made of cherry wood with markings of inlaid ebony, and are of unusually large size. Other models represent the different plane sections of the cone. The various surfaces of the second order are illustrated in a series of wooden models constructed by Schroeder of Darmstadt, in which are contained also many models of elementary solid geometry. For the purpose of drawing the conic sections, there is a collection of curves of different sizes in wood and hard rubber, and several pieces of apparatus suitable for describing these curves upon the blackboard in accordance with the well known kinematic methods. The series of models of descriptive geometry was constructed by Schroeder. The horizontal and vertical projections are traced upon stiff boards solidly joined together at right angles and of convenient size to allow in general the representation of three different models or of three different views of the same model. The form and construction suggest a division of these models into two classes : (1) the representation in metal of lines and surfaces, adjusted upon axes, the projections of several of their positions being given ; (2) the representation of solid bodies in hard wood, including the exhibition of their plane sections in various directions and the intersections of different surfaces and solids.

There is also an elaborate set of models illustrative of the metric system of weights and measures, and an Amsler's planimeter.

MECHANICS

ROBERT SIMPSON WOODWARD, C.E., Ph.D.....	<i>Professor</i>
MICHAEL IDVORSKY PUPIN, Ph.D.....	<i>Adjunct Professor</i>
JOSEPH CLEMENT PFISTER, A.M.....	<i>Tutor</i>

Courses

I—ANALYTICAL MECHANICS—As a text for this subject, Rankine's Applied Mechanics is used ; attention being confined chiefly, however, to Part I, Principles of Statics (including hydrostatics) ; Part III, Principles of Kinematics ; and Part V, Principles of Dynamics (including hydrodynamics). This text is supplemented by lectures on special topics, by written solutions and discussions of typical problems, and by demonstrations with the aid of apparatus. Particular attention is given to the doctrine of units and dimensions of units, and to problems affording actual applications of principles. 3 hours. Professor WOODWARD

This course is required of students in Civil, Mining, Mechanical, and Electrical Engineering ; and it is recommended to all students who may desire to pursue the higher applications of the science in dynamical astronomy, electricity and magnetism, thermodynamics, elasticity, physical geodesy, etc.

II—ELEMENTARY MECHANICS—Loney's Elements of Statics and Dynamics is used as a text. This work is supplemented by demonstrations with apparatus, by lectures on the theory of dimensions and units, and by lectures, chiefly historical, on the higher applications and results of the science. 2½ hours. Professor WOODWARD and Mr. PFISTER

This course is offered especially as an elective to students of the Junior year in the School of Arts. It is designed to afford as good a knowledge of the science as can be had without the calculus. It assumes that the student has passed in Course III of the department of Mathematics, or its equivalent.

III—THEORETICAL MECHANICS—Ziwet's Elementary Treatise on Theoretical Mechanics is used as a text. This requires familiarity with the elements of the differential and integral calculus. 2 hours. Mr. PFISTER

This course is designed to be supplementary to Course II, and is offered as an elective to those desiring a knowledge of the general principles of the science rather than the special principles essential to engineering.

IV—THERMODYNAMICS, with special reference to its bearing on the theory of calorific engines. 3 hours, first term. Professor PUPIN

Required of all students in Engineering.

V—ELEMENTARY THERMODYNAMICS—The ground covered by this course is indicated by Maxwell's Theory of Heat, which is used as a text. In addition, lectures are given on the more advanced principles and results of the science. 2 hours, one term. Professor WOODWARD

This course is offered as an elective to students of the fourth year in the School of Arts. Its pre-requisite is Course II, or an equivalent.

VI—THEORY OF DYNAMO AND MOTOR (INTRODUCTORY), covering elements of the theory of electric, magnetic, and electro-dynamic potential, theory of electro-magnetic and electro-dynamic induction and its application to the theory of an ideal dynamo—3 hours, first term. Professor PUPIN

Required of students in Electrical Engineering.

VII—THEORY OF DYNAMO AND MOTOR (DIRECT CURRENT), covering Hopkinson's theory of dynamo and motor designing, and Froehlich's method of dynamo and motor testing—3 hours, second term. Professor PUPIN

Required of students in Electrical Engineering.

VIII—THEORY OF ALTERNATORS AND TRANSFORMERS—3 hours, first term. Professor PUPIN

Required of students in Electrical Engineering.

IX—THEORY OF VARIABLE CURRENTS, particularly the theory of high frequency and high potential currents—2 hours, second term. Professor PUPIN

Required of students in Electrical Engineering.

NOTE—Courses I and III-IX may be pursued as minors for the degree of M.A. and Ph.D. by candidates who have not taken such courses in undergraduate work. 3 hours per week for one term constitutes a minor for the degree of M.A., and 3 hours per week for two terms a minor for the degree of Ph.D.

X—ADVANCED THEORETICAL MECHANICS—General principles of statics and kinetics; methods of Lagrange, Hamilton, and Jacobi; applications of the doctrine of energy to the interpretation of mechanical phenomena. Lectures, 2 hours, first and second term. Professor WOODWARD

XI—THEORY OF THE POTENTIAL FUNCTION—General exposition of theory; derivation of equations of Laplace and Poisson and theorems of Gauss, Green, and Stokes; with applications to problems in gravitation, hydromechanics, static electricity, and terrestrial magnetism. Lectures, 2 hours, first and second term. Professor WOODWARD

XII—GEODYNAMICS—Amount and distribution of earth's mass; phenomena of precession, nutation, and oceanic tides; variation of density, gravity, and pressure within the earth; thermal properties and secular contraction of the earth; mechanics of crumpling and crust movements. Lectures, 2 hours, first and second term. Professor WOODWARD

XIII—MATHEMATICAL THEORY OF ELASTICITY—Analysis of stresses and strains and expression of strains in terms of stresses; discussion of potential energy of strained media and the constants essential to define them; theory of wave motion in elastic media, with applications to sound and light. Lectures, 2 hours, first and second term. Professor WOODWARD

XIV—MAXWELL'S THEORY OF ELECTRICITY AND MAGNETISM—Lectures, 2 hours, first and second term

THEORY OF BESSEL'S FUNCTIONS AND SPHERICAL HARMONICS—Lectures, 1 hour, first and second term. Professor PUPIN

XV—ELECTROMAGNETIC THEORY OF LIGHT—Lectures, 3 hours, first term. Adjunct Professor PUPIN

XVI—ADVANCED THERMODYNAMICS, including its applications to thermo-electricity and thermo-magnetism, physical chemistry, and caloric engines—Lectures, 2 hours, first and second term. Professor PUPIN

XVII—ADVANCED THEORETICAL ELECTRICAL ENGINEERING, consisting of a discussion of the practical aspects of high frequency and high potential currents; theory of the telephone; theory of transmission of signal through cable possessing considerable capacity; theory of long-distance transmission of power by direct, alternating, and polyphase currents; conduction of currents through gases and dielectrics—Lectures, 3 hours, second term. Adjunct Professor PUPIN

NOTE—Time equivalent to 3 hours per week for four terms devoted to these courses is required as a major for the degree of Ph.D., and 3 hours per week for two terms as a major for the degree of M.A. For a minor for the degree of Ph.D., a time equivalent to 2 hours per week for two terms is required

Courses X and XI will alternate from year to year with XII and XIII, X and XI being assigned to the year 1893-4. Likewise, courses XIV and XV alternate with XVI and XVII, XIV and XV being assigned to the year 1893-4

Equipment

The department is supplied with various machines and models of machines for illustrating the so-called mechanical powers, with balances, dynamometers, air pump, hydraulic pumps, and other apparatus to which reference is made in the course of theoretical studies. In addition to its own appliances, the department has access to the apparatus of the allied departments, especially that of the department of Electrical Engineering, thus affording the facilities of an extensive equipment to the students in advanced work.

MINERALOGY AND METALLURGY

THOMAS EGLESTON, E.M., Ph.D. *Professor*

Mineralogy

ALFRED J. MOSES, E.M., Ph.D. *Adjunct Professor*

LEA McI. LUQUER, C.E. *Tutor*

HERBERT P. WHITLOCK, C.E. *Assistant*

Of the courses offered by the department, Courses I, II, III, and VI are required of all students in Mining Engineering, Metallurgy, Chemistry, and Geology; Course IV is required of students in Civil Engineering; Course V of

students in Architecture ; Course VII of students in Geology. Courses I and II are elective for Seniors in the School of Arts ; Course IV as a minor subject for candidates for the A.M. degree ; Course III as a minor subject for candidates for the Ph.D. degree.

Courses in Mineralogy

I—BLOWPIPE ANALYSIS—As an introduction to mineralogy. 1 hour per week conference, and 2 afternoons per week laboratory, 1 term first year. Professor MOSES, Mr. LUQUER, and Mr. WHITLOCK

II—CRYSTALLOGRAPHY—As an introduction to mineralogy. Lectures and conferences 2 hours per week, 1 term first year. Professor MOSES.

III—DESCRIPTIVE AND DETERMINATIVE MINERALOGY—Study of 200 important species, their properties, uses, and methods of determination. 2 hours per week lectures, 3 hours per week laboratory, second term of first year and first term of second year. Professor MOSES and Mr. LUQUER.

IV—THE MINERALS OF BUILDING STONES—Study of 70 species their properties and methods of determination. 2 hours lectures, 2 hours laboratory per week through second year. Professor MOSES and Mr. LUQUER

V—ELEMENTARY COURSE ON TWENTY-FIVE COMMON MINERALS—10 lectures in first term of third year as introduction to study of geology. Professor MOSES

VI—OPTICAL MINERALOGY—Designed as introductory to "petrography." 2 lectures per week and 1 afternoon, for two months of second term of second year. Mr. LUQUER

VII—OPTICAL MINERALOGY AND CRYSTALLOGRAPHY—Continuation of Course VI. 3 hours per week, third year. Professor MOSES and Mr. LUQUER

VIII—SYSTEMATIC MINERALOGY—Classification ; physical and chemical relations of species and groups ; critical study of some assigned group. 9 hours per week, two years. Professor MOSES

Major subject, Ph.D. Pre-requisite : Courses I, II, III, or equivalent.

IX—PHYSICAL MINERALOGY—General study of physical properties, with especial attention to : (a) measurement, methods of calculation and delineation of crystals ; (b) optical characters ; fundamental principles, and apparatus ; (c) optical and crystallographic study of assigned species. 9 hours per week, two years. Professor MOSES and Mr. LUQUER

Major for Ph.D. Pre-requisite : Courses I, II, III, or equivalent.

X—OPTICAL PROPERTIES OF MINERALS—Principles, apparatus, and distinguishing characters. 9 hours per week, one year. Mr. LUQUER

Major subject, A.M. Pre-requisite : Course IV, or equivalent.

XI—DESCRIPTIVE AND MATHEMATICAL CRYSTALLOGRAPHY—General characters, laws, groups, measurements, calculation, and delineation. Professor MOSES

Major for A.M. Pre-requisite : Course II, or equivalent.

Equipment

The work of the students in the college courses and in general mineralogy is performed in the blowpipe laboratory, a large room with conference tables and seats for about seventy-five men. In this room are the student collections of minerals and crystal models.

For the more advanced work the department uses a smaller room equipped for microscopic and goniometrical work. The equipment includes four lithological microscopes, five reflection goniometers, a Duboscq lantern with numerous attachments, three polariscopes, a specific gravity balance, a small photographic outfit and three section cutters.

The present mineralogical collection consists of about 26,000 labelled specimens, and includes, in addition to the main collection, a large suite of pseudomorphs, a collection illustrating the physical character of minerals, a collection of natural crystals and a collection of New York City minerals. Arranged in wall cases are large specimens, showing the associations of minerals. There are also three separate student collections of average specimens, more than 6000 in number ; several thousand unlabelled specimens used in determinative work, about 500 sections of minerals, and 1500 crystal models in wood and glass.

Among the collections of minerals that have been presented to the department from time to time are some that possess historic value, among which may be mentioned the Gillmore collection, made in Paris under the direction of the Abbé Haüy, an exhibit at the Sanitary Fair of Schulsberg (Wis.), stalactites, a fine suite of Russian minerals presented by the Czar, the two finest cerussites in the world, the Julian collection of minerals from Chesterfield, Mass., the famous collection of Professor How, of King's College, Nova Scotia, and a very valuable collection made by Dr. Egleston in Japan.

In addition, a large number of gifts of one or more specimens have been received, and these have been supplemented by careful purchasing and exchanging, so that the collection fairly ranks as one of the two or three great mineral collections of this country.

Metallurgy

JOSEPH STRUTHERS, Ph.B.....*Tutor*
GUSTAV J. VOLCKENING, Met.E., E.M.....*Assistant*

General Statement

Of the courses offered by the department, Courses I, II, III, and IV are required of all undergraduate students in Mining Engineering, Metallurgy, Geology, and Chemistry ; Courses V–IX are elective for candidates for the Ph.D. degree.

Courses in Metallurgy

I—GENERAL METALLURGY—As an introduction to courses II, III, and IV. 3 hours lectures and 1 hour review per week, first term, third year. Professor EGLESTON and Mr. STRUTHERS

II—METALLURGY OF IRON

III—METALLURGY OF STEEL—3 hours lectures and 1 hour review per week, second term, third year. Professor EGLESTON and Mr. STRUTHERS

IV—METALLURGY OF COPPER, LEAD, SILVER, GOLD, ZINC, TIN, AND MERCURY—3 hours lectures and 1 hour review, fourth year. Professor EGLESTON and Mr. STRUTHERS

The students in the course in Metallurgy for courses I, II, III, and IV have 1 additional hour per week, two years, for review and supplementary work. Mr. STRUTHERS

V—HIGHER STUDIES IN CALORIMETRY

VI—HIGHER STUDIES IN PYROMETRY

VII—MICROSCOPIC STUDY OF IRON AND STEEL

VIII—STUDIES IN THE SOLUBILITY OF METALS AT HIGH PRESSURE

IX—STUDIES OF THE PHYSICAL PROPERTIES OF METALS

Equipment

The metallurgical collections consist of specimens illustrating the manufacture and use of fuels and fire-brick, the manufacture of iron and steel by various processes in use, and of some historical processes. Collections illustrating both the ancient and the modern processes for treating ores of the metals, a large number of models of furnaces and instruments, 1500 lecture diagrams, 1500 lantern slides, and a very large number of working drawings used to construct works and to illustrate processes. A large number of instruments for making and observing physical tests. Pyrometers, calorimeters, and furnaces for working at high temperatures and pressures.

MINING

HENRY S. MUNROE, E.M., Ph.D.....	<i>Professor</i>
ROBERT PEELE, JR., E.M.	<i>Adjunct Professor</i>
EDWARD B. DURHAM, E.M.....	<i>Assistant</i>

General Statement

Courses I to XI are required of all candidates for the degree of Mining Engineer, and all, except VIII, of students in the Metallurgical course. Students of the Geological course take all except VII and VIII. Students in the Course of Civil Engineering attend Course I only.

Courses

I—EXCAVATION AND TUNNELLING—These lectures are given in the first term of the second year. 3 hours a week. Professor PEELE

W., Th., and F. at 10.30

The course deals with:

Excavation of earth—tools and methods employed, support of excavations, excavation in quicksand, steam shovels, and other mechanical excavators, and the handling and transportation of excavated material.

Dredges—hydraulic, endless chain, scoop, and clam shell; description of machines and methods for canal, river, and harbor work, and the handling of dredged material.

Explosives—descriptions of the various kinds, their manufacture and use.

Excavation of rock—hand and machine drills, methods of blasting, mammoth blasts, submarine blasting.

Quarrying—plant and methods for quarrying different rocks.

Tunnelling—methods of driving and timbering tunnels, handling and transportation of excavated material, drainage and ventilation of tunnels, submarine tunnels, permanent lining of tunnels, accidents in tunnelling, location of tunnels.

II—BORING AND SHAFT-SINKING—Lectures under this head are given in the second term of the second year, 2 hours per week. Professor PEELE

W. and Th. at 10.30

The subjects dealt with comprise:

Boring—methods and appliances for deep well boring, cable tool or oil well method, boring with diamond drill, for prospecting and other purposes.

Shaft sinking—methods and tools employed in soft material or in rock; special methods of sinking in water bearing formations, quicksand, etc. drainage of shafts; handling and hoisting of excavated material.

Shaft timbering and other systems of lining employed in special cases.

III—EXPLORATION, DEVELOPMENT, AND METHODS OF WORKING—4 hours a week, first term of third year. Professor MUNROE

M., T., at 10.30, Th. at 9.30, F. at 1.30

The course deals with:

Mineral deposits, characteristics of beds, masses, veins, and other deposits, and the irregularities and disturbances to which they are subject, as affecting the work of exploration and mining.

Examination and survey of mineral properties, relation of topography to geological structure, construction of maps and sections, and tracing of probable outcrops as a guide to exploration. Magnetic surveys with dip compass.

Prospecting by ditches, pits, and deep boring.

Development, choice of methods, location of openings.

Working of deposits and support of excavations; methods applicable to deposits of different thickness, inclination, and character. Coal mining, vein mining, working of thick deposits and soft-ore bodies. Salt mining. Support of special excavations. Surface workings.

IV—ORE DRESSING AND THE MECHANICAL PREPARATION OF COAL—4 hours a week in the second term of the third year. Professor MUNROE

M., T., at 10.30, Th. at 9.30, F. at 1.30

The course includes the general principles and theory of dressing; preliminary operations; hand dressing; cleansing; crushing; jigging with and without preliminary sizing, slime concentration, and description of typical dressing works and coal-washing plants in this country and abroad.

V—ORE-DRESSING LABORATORY—3 hours per week, second term. Professor MUNROE

M. 2 to 5

During the second term of the fourth year a portion of the time assigned to ore-testing is devoted to the mechanical assaying of ores and coal by hand jigging and vanning. The students also adjust and operate ore-dressing machines, and test the work of the same by hand and fire assays.

VI—MINE ENGINEERING—2 hours per week first term and 1 hour per week second term of fourth year. Professor MUNROE

M. at 12.30, Th. and F. at 11.30

The course includes:

Extraction, methods and machinery, handling mineral in working places, underground haulage.

Surface handling and transportation, arrangements for loading and unloading cars and vessels, and for storing of minerals. Mineral railroads.

Drainage, sources of mine waters, methods for the control and raising of water; dams, drainage levels.

Ventilation, air of mines, mine gases, methods of ventilation, control and measurement of air currents.

Accidents to men in shafts, levels, and working places; fire-damp and dust explosions; mine fires; inundations; rescue and relief of men.

VII—MINE PLANT—A series of 2 lectures per week, throughout the fourth year. Professor PEELE

W. at 12.30, Th. and F. at 11.30

The course includes descriptions and critical discussion of the machinery employed in hoisting, drainage, and ventilation; air compressing plant; types of plant best adapted to different conditions; erection and care of machinery; accidents, breakage, and repairs.

Lectures are given also upon the design of head-frames, hoisting cages, ventilating fans, and other portions of mining plant.

VIII—DESIGN OF MINE PLANT—2 terms, 12 hours a week. Professor PEELE

In the third and fourth years the students are assigned a series of problems in the design and construction of mine plant. This work supplements the lectures on the design of mining machinery, involving original reading and study, and the preparation of working drawings, bills of material, specifications, and estimates.

The work is done under constant supervision and advice in the draughting room.

IX—MINE SURVEYING—I hour a week, second term, second year. Mr. DURHAM

F. at 10.30

This course is introductory to the practical work in underground surveying in connection with the summer school in mining. It includes the general principles of underground surveying, the construction of mine maps and sections, the measurement of contracts, the location of lines for new work.

X—ADMINISTRATION AND MINE ACCOUNTS—I hour per week, second term of fourth year. Professor MUNROE

M. at 12.30

The course includes:

Administration, organization, and business management, mine accounts, and cost sheets. Examination and valuation of mines.

XI—THE SUMMER SCHOOL OF PRACTICAL MINING is held in June and July, at some mine selected for the purpose, in the vacation between the third and fourth years, and lasts six weeks. Professor PEELE and Assistant in Mining

The course of instruction includes four or five weeks' detailed study of the plant and methods of working at some important mine; geological work, surface and underground; mine surveying, and excursions to other mines and mining regions.

The course of study includes shaft sinking, drifting, stoping, timbering, underground haulage, hoisting, mine drainage, ventilation, surface plant and machinery, mine buildings, shops, houses, etc., water supply, drainage, organization, and administration. The students are divided into small squads, and assigned each day to a foreman, or working gang of miners, for the study of some definite subject. Each squad of students is visited several times during the day by the instructor, who supplements the explanations of the miners, and indicates subjects demanding special study and observation. Manual labor, and the acquirement of manual dexterity by the student, are subordinated to the development of his powers of observation, and to the careful and critical study of the work going on about him, and the recording of his observations and study in notes and sketches taken on the spot. The students' note-books are examined and criticised each evening. By thus carefully systematizing and directing the work of the student his time is economized, and as much ground is covered in a week as would be in a month under ordinary circumstances, and the work is done more thoroughly.

This summer school has been in successful operation since 1877, and has proved itself an indispensable adjunct to the course of instruction. It bears the same relation to the study of mining as laboratory work to the study of chemistry or physics, or clinical instruction and hospital practice to the study of medicine.

In 1892 the headquarters of the summer school was at the Atlantic Mine near Houghton, Mich., and visits were made to numerous copper mines, dressing and smelting works, including the Quincy, Tamarack, Calumet and Hecla, and Central, and to mines in the iron region including the Cleveland, Lake Angeline, Champion, Chapin, Norway, Currie, and Vulcan.

In 1893 the summer school was held at the Mount Hope and Franklin iron mines, Morris Co., N. J., and at the collieries of Messrs. Cox & Co., at Oneida, Schuylkill Co., Pa. A visit was made also to the large strippings of the mammoth vein at Hollywood and Latimer. The last week of the session was spent at the mining exhibit of the World's Fair, Chicago.

Note—Special courses, consisting of personal instruction, reading and experimental investigation will be arranged for advanced students according to their individual needs. These courses vary in difficulty and in the amount of time necessary, according as the student is a candidate for the degree of A.M. or Ph.D., and according as he pursues Mining as a major or a minor subject. The following are suggested:

XII—COAL MINING—2 hours a week

XIII—ORE MINING—2 hours a week

XIV—COAL WASHING—I hour a week

XV—ORE DRESSING—I hour a week

XVI—EXAMINATION OF A MINERAL PROPERTY, OR A MINE—4 to 6 weeks devoted to field and underground work in the Summer School of Practical Mining, with conferences at convenience of professor

XVII—EXAMINATION OF A COAL-WASHING PLANT, OR AN ORE DRESSING PLANT—4 to 6 weeks' work in the mill and in the laboratory, with conferences

XVIII—SPECIAL PROBLEMS AND ORIGINAL INVESTIGATIONS IN ORE DRESSING AND MINING AS ASSIGNED—With conferences, laboratory, and field work as required

Equipment

MINING MUSEUM—The subject of mining is illustrated by collections of mine maps, working drawings, diagrams, photographs, models, mining tools, mining machines, ores and products of dressing works, and surveying apparatus.

Maps of coal and metal mines of this and other countries. Working drawings, diagrams, and photographs of mine plant, and of mining and dressing machinery. Models of mines ; of shafts, tunnels, and galleries, illustrating methods of sinking, driving, timbering, tubbing, and walling. Models of deep boring apparatus, shaft head gear, hoisting engines, man engines, pumps, ventilators, safety cages, mine cars, crushers, stamps, ore washers, shaking tables, and other dressing machines. Mining tools and mining machines ; picks, shovels, sledges, drills, blasting apparatus, lamps, safety lamps, anemometers, hand-power and machine drills. Ores and dressing products from Clausthal, Lake Superior, Missouri, and elsewhere. Surveying instruments, geological compasses and clinometers, attraction compasses, dipping needles, hanging compasses and arcs, transits, lamp signals, rods, and apparatus for plumbing and measuring shafts.

Owing to lack of room the greater part of these collections are not on exhibition at present.

LECTURE ILLUSTRATIONS—The lectures on mining are illustrated by over 1600 blue prints from negatives made for the purpose. These prints are collected in scrap-books illustrating the different courses of lectures, and each student has the use of one of these books for reference during the lecture, and for home study. These blue prints have many advantages over the usual form of lecture illustrations by lantern slides or wall diagrams. The latter are, however, used when necessary to supplement the blue prints.

ORE-DRESSING LABORATORY—Contains crushing and concentrating machinery, and the necessary apparatus for sampling and testing ores.

MINES AND DRESSING WORKS—Numerous coal, iron, and other mines are easily accessible from New York in from one to four hours by rail. Magnetic iron mines in New York, New Jersey, and Pennsylvania ; hematite mines in the same states, and in Connecticut ; anthracite mines in Pennsylvania ; zinc mines in New Jersey and Pennsylvania. Thus close to New York, the best practice in mining under most varied conditions, and the most modern and effective mining and dressing machinery in the country, may be studied. By going a little farther one may reach the bituminous coal regions and natural gas and oil fields in one direction, and the pyrites deposits of Vermont and Canada in the other ; while the excursions of the summer class in mining extend as far as the copper and iron regions of Lake Superior, which can be reached at moderate cost by taking advantage of the steamers plying on the great lakes.

NEUROLOGY

M. ALLEN STARR, M.D.....	<i>Professor</i>
FREDERICK PETERSON, M.D.....	<i>Chief of Clinic</i>
WILLIAM H. CASWELL, M.D.....	<i>Clinical Assistant</i>
MORTON R. PECK, M.D.....	<i>Clinical Assistant</i>
PEARCE BAILEY, M.D.....	<i>Clinical Assistant</i>
LOUIS F. BISHOP, M.D.....	<i>Clinical Assistant</i>
C. E. ATWOOD, M.D.....	<i>Clinical Assistant</i>
STEWART DOUGLASS, M.D.....	<i>Clinical Assistant</i>
A. W. FERRIS, M.D.....	<i>Clinical Assistant</i>
LEWIS A. CONNOR, M.D.....	<i>Clinical Assistant</i>

Courses

I—THE DISEASES OF THE MIND AND NERVOUS SYSTEM—Didactic lectures, 1 hour a week for five months; and 6 demonstrations, illustrated with the magic lantern, of the pathology of nervous diseases. Professor STARR

Required, in the second and third years, of candidates for the degree of M.D.

II—CLINICAL LECTURES AT THE VANDERBILT CLINIC—At these clinics all forms of nervous disease, including insanity, are demonstrated. During the months of didactic instruction the clinics are so arranged as to illustrate the clinical side of the subject lectured upon. 1 hour a week during the entire academic year. Professor STARR

F. at 2 P.M.

Required, in the second and third years, of candidates for the degree of M.D.

III—PRACTICAL INSTRUCTION IN NEUROLOGY—"Section teaching," by the Chief of Clinic, at which a division of ten students is taught the practical examination of nervous patients, including electro-diagnosis and electro-therapeutics. 6 lessons for each student at the Vanderbilt clinic. Dr. PETERSON

Optional, in the third year, for candidates for the degree of M.D.

IV—INSANITY—10 clinics at the Ward's Island Insane Asylum. Dr. PETERSON

Optional, in the second and third years, for candidates for the degree of M.D.

OBSTETRICS

JAMES W. McLANE, M.D.....	<i>Professor</i>
ERVIN A. TUCKER, M.D.....	<i>Instructor</i>

Courses

I—THEORY AND PRACTICE OF OBSTETRICS—Lectures, 3 hours a week from October 1 to March 15. Professor McLANE

Required, in the second and third years, of candidates for the degree of M.D.

II—PRACTICAL INSTRUCTION AT THE SLOANE MATERNITY HOSPITAL—Members of the graduating class in medicine are required each to attend at this hospital a certain number of cases of labor. For this purpose the students of the third year are divided, at the beginning of the academic year, into sections of six, each section remaining on duty for one week. During this time they are furnished with lodgings, free of charge, on the grounds of the Medical School. Their rooms are connected with the hospital by electric wires, so that they may be summoned quickly to cases of emergency. Daily bedside instruction is given by the Instructor, who is the Resident Physician at the Sloane Hospital, and an examination on the work of the week is held there by him every Saturday. A daily clinical lecture is also given at the hospital. No specified number of hours a week. Dr. TUCKER

The Sloane Maternity Hospital

(See table of contents.)

This is upon the grounds of the College of Physicians and Surgeons,⁷ and the service of the hospital is under the exclusive direction of the Professor² of Obstetrics, the Instructor being also the Resident Physician, as above stated.

The number of deliveries averages over seven hundred a year. These, with the obstetric operations, and the subsequent treatment of women and infants, afford invaluable bedside experience, such as is offered at no other medical school in this country.

OPHTHALMOLOGY

HERMAN KNAPP, M.D.....	<i>Professor</i>
CHARLES H. MAY, M.D....	<i>Chief of Clinic and Instructor in Ophthalmoscopy</i>
JOHN HERBERT CLAIBORNE, M.D.,	<i>Clinical Assistant and Instructor in Refraction and Motility</i>
WARD A. HOLDEN, M.D.....	<i>Clinical Assistant</i>
HENRY H. TYSON, M.D.....	<i>Clinical Assistant</i>
JACKSON M. MILLS, M.D.....	<i>Clinical Assistant</i>
EDWARD B. COBURN, M.D.....	<i>Clinical Assistant</i>

Courses

I—CLINICAL LECTURES AT THE VANDERBILT CLINIC UPON THE DISEASES OF THE EYE—In selected cases the diagnosis is made, treatment is applied, and operations are performed before the class

After the lectures, as opportunity offers, microscopic demonstrations of the pathological histology of the eye are made by Dr. Holden. 1 hour a week throughout the academic year. Professor KNAPP

Tu, at 3 P.M.

Required, in the third year, of candidates for the degree of M.D.

II—PRACTICAL INSTRUCTION AT THE VANDERBILT CLINIC IN THE USE OF THE OPHTHALMOSCOPE—6 lessons for each student. Dr. MAY

Optional, in the third year, for candidates for the degree of M.D.

III—PRACTICAL INSTRUCTION, AT THE VANDERBILT CLINIC, IN THE REFRACTION AND MOTILITY OF THE EYE—6 lessons for each student. Dr. CLAIBORNE

Optional, in the third year, for candidates for the degree of M.D.

IV—HOSPITAL CLINICS IN THE DISEASES AND THE OPERATIVE SURGERY OF THE EYE AT THE NEW YORK OPHTHALMIC AND AURAL INSTITUTE, 46 East 12th Street. To these clinics the students are invited in sections. Professor KNAPP

Sat. at 2:30 P.M., throughout the academic year.

Optional, in the third year, for candidates for the degree of M.D.

ORIENTAL LANGUAGES

EDWARD DELAVAN PERRY, Ph.D. *Professor of Sanskrit*

RICHARD J. H. GOTTHEIL, Ph.D. *Professor of Rabbinical Literature and the Semitic Languages*

A. V. WILLIAMS JACKSON, L.H.D., Ph.D. . . . *Adjunct Professor of the English Language and Literature*

SANSKRIT—Professor PERRY

General Statement

Courses I and IV are open to all university students; Courses II and III to advanced students only.

The courses of instruction in the department of Sanskrit are intended to be introductory to the study of Comparative Philology, and of the History of Religions, as well as to the study of the History, Antiquities, and Literature of India. To a knowledge of these at first hand an acquaintance with Sanskrit is indispensable; and this is not very difficult for any one to acquire who has a good knowledge of Latin and Greek, and is willing to work hard at first.

The Elementary Course (Sanskrit I), open to all university students, is designed to give a thorough practical acquaintance with the commoner grammatical forms of the "classical" Sanskrit, and a considerable facility in reading. It may be taken—as an optional study, not counting among the electives—by Juniors in the School of Arts.

The text-books needed will be Whitney's Sanskrit Grammar, 2d ed., Perry's Primer, and Lanman's Reader, with vocabulary and copious notes—all published by Ginn & Co., Boston and New York. This course may be profitably taken in connection with almost any branch of linguistic study, particularly by those who intend to become teachers of language.

Course II, open only to students who have already taken Course I or its practical equivalent, is intended to give in the first half-year an introduction to

the study of the Vedic or pre-classical language and literature. Text-books : Lanman's Reader ; Hillebrandt's *Veda-Chrestomathie*, Berlin, 1885; Windisch's *Zwölf Hymnen des Rig-Veda*, mit Sāyana's Commentar, Leipsic, 1883. In the second half-year, depending upon the composition and wishes of the class, the same subject may be continued, or more difficult extracts from the classical Sanskrit literature may be taken up. In the latter case the *Meghadūta* of Kālidāsa (author of the *Çakuntalā*) will probably be read, together with selections from Böhrtlingk's *Sanskrit-Chrestomathie*, Leipsic, 1877. Of the *Meghadūta* there are several editions, the most useful being that of Stenzler (with German vocabulary), Breslau, 1874, and one with English notes published by the "Nirnaya-Sāgara Press," Bombay, 1890.

Course III is intended to give an elementary knowledge of Pāli, an offshoot of Sanskrit, and the language of the sacred books of the Southern Buddhists (Ceylon, etc.). The grammar is simpler than that of Sanskrit, and offers few or no difficulties to one who has a fair knowledge of the latter. Text-books : E. Müller's *Simplified Pāli Grammar*, London (Trübner), 1884, and Elwell's *Nine Jātakas* (Birth-Stories), Ginn & Co., 1886.

Courses

* I—SANSKRIT, ELEMENTARY COURSE. Professors JACKSON and PERRY
Tu. and F. at 9.30

* II—SANSKRIT, ADVANCED COURSE. First half-year : Introduction to the study of the Veda. Second half-year : Same subject continued, or Kālidāsa's *Meghadūta*, or Böhrtlingk's *Sanskrit-Chrestomathie*
M. and Th. at 9.30

* III—PĀLĪ, ELEMENTARY COURSE
W. at 9.30

First half-year only.

Possibly Course III may be continued throughout the year.

* IV—INTRODUCTION TO THE STUDY OF PHONETICS
W. at 9.30

Second half-year only. An additional hour weekly may be given.

SEMITIC LANGUAGES—Professor GOTTHEIL

General Statement

Courses I, II, III, IV, VI, VII, and X are open to all university students ; Courses V, VIII, IX, and XI to advanced students only.

The course in Hebrew extends over three years. The first year is devoted to the study of the elements : the second to the study of the syntax and the acquiring of ease in translating from Hebrew into English and from English into Hebrew ; the third to a critical study of one or more books of the Bible.

The attention of students in the School of Arts is directed to the fact that it is desirable that those who intend entering a theological seminary after graduation shall have had at least a two-years' previous training in Hebrew. Oppor-

tunity to do so is given the students of Columbia College—Hebrew being an elective in both the Junior and Senior classes.

Courses in Hebrew

* I—BIBLICAL HEBREW, ELEMENTARY COURSE—Harper's Hebrew Method and Manual; Harper's Elements of Hebrew—both published by Scribners, New York

M. and W. at 4.30

* II—BIBLICAL HEBREW, SECOND COURSE—Critical study of the Book of Job, in connection with Gesenius' *Hebräische Grammatik* (25th ed.), Driver's Treatise on the Use of the Tenses in Hebrew (3d ed.), Ewald's *Syntax of the Hebrew Language*, Edinburgh, 1879, Gesenius' *Hebräisches und Aramäisches Handwörterbuch* (10th ed.), 1886, or Siegfried and Stade's *Hebräisches Wörterbuch*, 1892

M. and T. at 3.30

For other courses in Biblical Hebrew see below.

* III—RABBINICAL HEBREW—Interpretation of selected treatises of the Mishna

Tu. 4.30–6

For this course a previous knowledge of Biblical Hebrew is demanded.

* IV—RABBINICAL HEBREW—Mediæval Hebrew philosophy. During the first half-year: interpretation of the *Emunoth Wedēōth* of Saadyah (ed. Fürst.), in conjunction with Landauer's ed. of the Arabic original. Works of reference: S. Landauer, *Kitab al-Amanat von Saadja*, Leiden, Brill, 1880; Beer, *Philosophie und philosophische Schriftsteller der Juden*, Leipzig, 1852; Schmiedl, *Studien über Jüdische insbesondere über Jüdische-Arabische Religionsphilosophie*, Wien, 1869. During the second term: interpretation of portions of the *Moreh Nebuchim* of Maimonides, in conjunction with Munk's ed. of the Arabic original. Works of reference: S. Munk, *Le guide des Égarés*, Paris, 1856; D. Kauffmann, *Geschichte der Attributenlehre*, Halle, 1881

W. 4.30–6

Courses in Epigraphy

* V—SEMITIC EPIGRAPHY, INTRODUCTORY COURSE—Interpretation of the Phœnician inscriptions in the *Corpus Inscriptionum Semiticarum*, Vol. I. Lectures on the history of the Semitic alphabets and the earliest Hebrew inscriptions

M. at 1.30

For this course a previous knowledge of Biblical Hebrew is demanded.

For other courses in Semitic Epigraphy, see below.

* VI—ASSYRIAN, FIRST COURSE—Abel and Winckler's *Keilschrifttexte zum Gebrauch bei Vorlesungen*; in connection with Delitzsch's *Assyrian Grammar*

Tu. and Th. at 2.30

For other courses in Assyrian, see below.

Courses in Arabic

* VII—ARABIC, FIRST COURSE—Socin's Arabic Grammar, with exercises in translating Arabic into English and English into Arabic

Tu., W., and Fr. at 3.30 during the first half-year. Tu. at 2.30 during the second half-year

* VIII—ARABIC, SECOND COURSE—Arnold's *Chrestomathia Arabica*, historical and geographical selections

W. 2 to 3.30

* IX—ARABIC, THIRD COURSE—First half-year: Interpretation of the Qur'an, in connection with the commentary of Beidhawi (ed. Fleischer, 1846)

Required outside reading: Nöldeke, *Geschichte des Qorans* (Göttingen, 1860); Muir, *Life of Mahomet* (London, 1858); Sprenger, *Das Leben und die Lehre des Mohammed* (3 vols., Berlin, 1861).

Second half-year: Interpretation of Nöldeke's *Delectus Veterum Carminum Arabicorum* (Porta Ling. Orient, pars xiii)

Th. 2 to 3.30

Students taking this course are required to provide themselves with Caspari-Müller's *Arabische Grammatik* (5th ed.), and either Salmoné's *Arabic-English Dictionary* (London, 1890), or Wahrmund's *Handwörterbuch der arabischen und deutschen Sprache* (Geissen, 1877).

Courses in Syriac

* X—SYRIAC, SECOND COURSE—Interpretation of Hoffmann's *Julianos der Abtrünnige* (Leyden, Brill, 1880), or Cureton's *Spicilegium Syriacum* (London, 1855)

Tu. and F. at 1.30

For elementary course in Syriac, and for Aramaic, see below.

Semitic Seminar

XI—THE EGYPTIAN DIALECT OF MODERN ARABIC—In connection with Spitta's *Grammatik des Arabischen Vulgär-dialektes von Ägypten* (Leipzig, 1880), and Contes Arabes Modernes (Leyden, 1883). The following works will also be necessary: Mehaïl Šabbâg's *Grammatik der Arabischen Umgangssprache in Syrien und Ägypten*. Ed. by H. Thorbecke (Strassburg, 1886); Vollers' *Lehrbuch der Ägypto-Arabischen Umgangssprache*, Kairo, 1890; Max Van Berchem, *Conte Arabe en dialecte Égyptien* (Paris, Impr. Nationale, 1889)

Only advanced students who have taken Arabic for two years will be admitted to the Seminar.

Courses in Semitic Languages at the Union Theological Seminary

The following courses (possibly subject to some modification), to be given in 1893-4 at the Union Theological Seminary, 700 Park Avenue, are open to university students in Columbia College, and may count as work offered for the degrees of Master of Arts and Doctor of Philosophy

I.—October to December, 1893

I—BIBLICAL HEBREW, ELEMENTARY COURSE—Davidson, Introductory Hebrew Grammar. Mr. FAGNANI

Mon., Tu., W., Th., and F. at 9.25

II—BIBLICAL HEBREW—The Book of Nehemiah. Professor F. BROWN

Tu. and W. at 9.25

III—BIBLICAL HEBREW — The Psalms, with exegesis. Professor F. BROWN

M. and F. at 11.35

IV—BIBLICAL HEBREW—Isaiah i-xii. Professor F. BROWN

Th. and F. at 10.30

V—BIBLICAL HEBREW—Unpointed text of Genesis (text of Muhlau and Kautzsch), followed by Mesha-inscription (see Course VI). Professor F. BROWN

Th. at 9.25 (until Nov. 9)

VI—SEMITIC EPIGRAPHY—Mesha-inscription (see Course V). Professor F. BROWN

Th. at 9.25 (after Nov. 9)

VII—SYRIAC, ELEMENTARY COURSE—Nestle, Syriac Grammar; Roediger, Chromathie. Professor F. BROWN

Tu. at 2.30

VIII—ASSYRIAN, SECOND COURSE—Delitzsch, Lesestücke; selected inscriptions, tablets, syllabaries, etc. Professor F. BROWN

Th. at 2.20

II.—January to April, 1894

IX—BIBLICAL HEBREW—Sight-reading of pure Hebrew. Mr. FAGNANI

M. at 9.25

X—BIBLICAL HEBREW—Selections from the Pentateuch, with exegesis. Mr. FAGNANI

Tu. and W. at 9.25

XI—BIBLICAL HEBREW—Analysis of the Hexateuch. Professor F. BROWN

Tu. and W. at 9.25

XII—BIBLICAL HEBREW—Books of Kings, with comparison of Assyrian and Babylonian history. Professor F. BROWN

Th. and F. at 9.25

XIII—BIBLICAL HEBREW—Selections from Hebrew poetry of different periods (*e. g.* Deut. xxxii, Judges v, Job, Proverbs, Eccles., Song of Songs). Professor F. BROWN

Th. and F. at 10.30

XIV—BIBLICAL LITERATURE—Lectures on the canon, text and literature of the Old Testament. Professor BRIGGS

M. at 10.30 and Tu. at 11.35

XV—BIBLICAL ARAMAIC—Dan. ii, 4–vii, 28 (text of Baer and Delitzsch); Kautzsch, *Grammatik des Biblisch-Aramäischen*. Mr. FAGNANI

Th. at 2.30

XVI—SYRIAC, Continued—(See Course VII). Professor F. BROWN

Tu. at 2.30

XVII—ASSYRIAN, Continued—(See Course VIII). Professor F. BROWN

Th. at 5

IRANIAN LANGUAGES—Professor JACKSON

General Statement

Courses I, III, and IV are open to all university students; Courses II and V, to advanced students only.

Courses

I—AVESTAN, ELEMENTARY COURSE—Grammar and reading of texts. Professors PERRY and JACKSON

W. and F. at 12.30

The first term will be devoted to acquiring a knowledge of the grammar, constant reference being made to the corresponding forms in Sanskrit. The second term will be spent in reading selections from the Avesta, attention being paid to the laws for the metrical construction of the text wherever possible. Text-book: Jackson's *Avesta Series*: Part i, Grammar; Part ii, Texts.

II—AVESTAN, ADVANCED COURSE—Study of the grammar, interpretation of texts; antiquities and literature.

M. at 12.30 and W. at 2.30

This course will provide for a more extended study of the Avesta, chiefly according to the "comparative" method, not neglecting, however, the so-called "traditional school" of interpretation. Special time will be spent on the Gāthās. Geldner's edition of the Avesta-text will be used.

III—OLD PERSIAN CUNEIFORM INSCRIPTIONS

Th. at 1.30, first half-year only

This course is to run parallel with the advanced Avestan. Text-book: Spiegel's *Die Altperischen Keilinschriften*; Bartholomae's *Handbuch der Altiranischen Dialekte* will also be needed.

IV—PAHLAVI, INTRODUCTORY COURSE

Th. at 1.30, second half-year only

An introduction into this language will be given in connection with the second course; and a number of Avestan selections with the Pahlavi translations will be studied side by side. Text-book: C. de Harlez' *Manuel du Pehlevi*.

V—ZOROASTER AND HIS TEACHING—Lectures

M. at 11.30

Study of Language

I—INTRODUCTION TO THE STUDY OF LANGUAGE—Professor JACKSON
M. and W. at 10.30

Course I is open to all university students, and to Juniors in the School of Arts.

By agreement between Professors Carpenter, Gottheil, Jackson, and Perry, a course of 2 hours weekly, consisting of lectures and exercises, will be offered in each year under the foregoing title. This course is designed to serve as a preparation for advanced studies in any field of linguistic research, and will, it is believed, prove of great value to all university students who look forward to such investigations. It will be the object of the instructor to illustrate, from the points of view of the psychologist and of the phonetician respectively, the conditions of the existence of language, both as a psychical and as a physical product, and the laws which regulate its differentiation, decay, and growth. The course will be taken with most profit by those who have had a good preliminary training in psychology and in the elements of phonetics.

In 1894-5 this course will probably be conducted by Professor Perry, in 1895-6 by Professor Gottheil.

OTOLOGY

ALBERT H. BUCK, M.D.....	<i>Clinical Professor</i>
WILLIAM COWEN, M.D.....	<i>Chief of Clinic</i>
ROBERT LEWIS, JR., M.D.....	<i>Clinical Assistant</i>
W. WHITEHEAD GILFILLAN, M.D.....	<i>Clinical Assistant</i>
E. A. KEILY, M.D.....	<i>Clinical Assistant</i>
A. G. TERRELL, M.D.....	<i>Clinical Assistant</i>

Courses

I—PRACTICAL INSTRUCTION IN THE DIAGNOSIS AND TREATMENT OF THE DISEASES OF THE EAR, AT THE VANDERBILT CLINIC.—6 lessons for each student. Professor BUCK

Optional, in the third year, for candidates for the degree of M.D.

DEPARTMENT OF PATHOLOGY

T. MITCHELL PRUDDEN, M.D.....	<i>Professor</i>
GEORGE C. FREEBORN, M.D.....	<i>Instructor in Normal Histology</i>
TIMOTHY MATLACK CHEESMAN, M.D.....	<i>Instructor in Bacteriology</i>
IRA VAN GIESON, M.D.....	<i>First Assistant in Normal Histology and</i> <i>Alonzo Clark Scholar</i>
EUGENE HODENPYL, M.D.....	<i>Assistant in Pathology</i>
JOHN SLADE ELY, M.D.....	<i>Assistant in Pathology and Curator</i> <i>of the Museum of Pathology</i>
JAMES EWING, M.D.....	<i>Assistant in Normal Histology</i>
HENRY POWER, M.D.....	<i>Assistant in Normal Histology</i>
EDWARD M. KITCHEL, M.D.....	<i>Assistant in Normal Histology</i>
PEARCE BAILEY, M.D.....	<i>Assistant in Pathology</i>
EDWARD LEAMING, M.D.....	<i>Assistant in Photography</i>
ALEXANDER LAMBERT, M.D.....	<i>Alumni Association Fellow in Pathology</i>
WILLIAM H. PARK, M.D.....	<i>Alumni Association Fellow in Pathology</i>

General Statement

For convenience of administration, and for the better association of allied themes, the laboratories of Pathology, Normal Histology, Bacteriology, and Photography are grouped together in the Department of Pathology under the direction of the Professor of Pathology.

Courses in Pathology

I—PRACTICAL INSTRUCTION IN PATHOLOGIC ANATOMY AND HISTOLOGY, AND IN BACTERIOLOGY AS APPLIED TO MEDICINE, is given in the large laboratory on the top floor of the north wing of the Medical School. Each student is given about one hundred sections or other permanent preparations, illustrating the more important and common lesions. These he mounts for the microscope, and studies, making notes and sketches. This collection of specimens he retains for future reference.

Demonstrations of gross pathologic specimens are made as the material is gathered, and the members of the class may attend the autopsies held at the Roosevelt and Bellevue Hospitals.

The systematic course opens with a study of the various phases of inflammation; tumors are next studied. The methods of staining, examining, and cultivating bacteria and other micro-organisms are then illustrated, and the student himself prepares stains, and studies most of the more important pathogenic germs. The remainder of the course is devoted to the systematic study of the lesions of the viscera. Each student is furnished with a microscope and the necessary instruments and reagents. Delafield and Prudden's Handbook of Pathological Anatomy and Histology is used as a text-book in this course. 6 hours a week for one half of the academic year. Professor PRUDDEN and Drs. HODENPYL, ELY, CHEESMAN, and BAILEY

Required, in the third year, of candidates for the degree of M.D.

II—PATHOLOGIC ANATOMY AND HISTOLOGY, EXPERIMENTAL PATHOLOGY, AND APPLIED BACTERIOLOGY—A limited number of graduates in medicine, or other advanced workers, is admitted to the special laboratories for the pursuit of advanced lines of study in these themes. No definite number of hours a week. Professor PRUDDEN, Drs. HODENPYL, CHEESMAN, FREEBORN, and VAN GIESON

Courses in Normal Histology

I—PRACTICAL INSTRUCTION IN THE LARGE LABORATORY, which occupies the entire upper floor of the north wing of the College of Physicians and Surgeons. Sections and other preparations of the more important structures of the normal body, about one hundred and twenty in number, are given to each student during the course. These he is required to mount and study under the microscope, making notes and drawings of the entire series of specimens. This collection he retains for future reference. Each student is supplied with a microscope and with a tray of instruments and reagents. Prudden's Manual of

Normal Histology is used as a text-book in this course. 8 hours a week for one half of the academic year. Drs. FREEBORN, VAN GIESON, EWING, POWER, and KITCHEL

Required, in the first year, of candidates for the degree of M.D.
Elective for Seniors in the School of Arts.

II—PRACTICAL INSTRUCTION IN MICROSCOPIC TECHNOLOGY AND ADVANCED NORMAL HISTOLOGY is given to a limited number of graduates in medicine, or other qualified workers, in the special laboratory on the second floor of the north wing of the Medical School. No definite number of hours a week. Drs. FREEBORN and VAN GIESON

Courses in Bacteriology

For required instruction for medical students in Bacteriology as applied to Medicine, see Pathology I, page 89

For optional instruction in the same for advanced workers, see Pathology II, page 89

I—LABORATORY COURSE—There is opportunity each year for a few graduates in medicine or other qualified workers, to receive special courses in practical elementary bacteriology. The laboratory is abundantly supplied with apparatus for the culture and study of micro-organisms, and has under cultivation a large collection of identified species. In these courses the special applications of bacteriology to practical medicine are held in view. They require attendance at the laboratory during the entire day for from one to two months. Dr. CHEESMAN

II—LABORATORY COURSE—Methods of preparation, staining, microscopic study, measurement, etc., of bacteria. Preparation of culture media; study and record of observations, of selected typical species; systematic analyses for determination of unknown species; methods of isolation of species; qualitative and quantitative biological examinations of water, soil, and air; methods of determining pathogenic properties, disinfection, modes of testing value of germicides. Text-book: Sternberg's Bacteriology

Minor for the degree of A.M. or of Ph.D.

III—LABORATORY COURSE—As under Course II, with additional study and determination of known species of bacteria; special study of the chemical products eliminated in the growth of bacteria, and the pursuit of some selected theme for original investigation

Major for the degree of A.M. or of Ph.D.

Research

Research in pathology and in bacteriology may be pursued in the laboratories of this department by a limited number of graduate students or practitioners of medicine or other advanced workers under the direction of the professor. To

such men the large collection of pathologic specimens preserved for microscopic study, and the collection of bacterial cultures belonging to this department, are accessible. No specified number of hours a week. Professor PRUDDEN

Fellowships

For the University and Alumni Association Fellowships, open to persons wishing to do special work under the Professor of Pathology, see table of contents

Museum

The museum of pathology is made use of in the work of this department, both for the instruction of medical students, and as a place of deposit for specimens showing new or rare forms of lesions

Photography

Facilities for gross photography of cases or of specimens, and for photomicrography, in charge of Dr. LEAMING, have been recently provided in connection with this department. These facilities may be made use of by other departments also. They are largely drawn upon in recording the results of special forms of research in pathology and bacteriology

PHILOSOPHY AND EDUCATION

NICHOLAS MURRAY BUTLER, Ph.D.....	<i>Professor</i>
JAMES MCKEEN CATTELL, Ph.D.....	<i>Professor</i>
JAMES HERVEY HYSLOP, Ph.D.....	<i>Instructor</i>
LIVINGSTON FARRAND, A.M., M.D.....	<i>Instructor</i>
WALTER LOWRIE HERVEY, Ph.D.....	<i>Professor in the Teachers College</i>
JOHN FRANCIS WOODHULL, A.B.....	<i>Professor in the Teachers College</i>
CHARLES ALPHEUS BENNETT, B.S.....	<i>Professor in the Teachers College</i>
JOHN FRANKLIN REIGART, A.B.....	<i>Professor in the Teachers College</i>
CLARENCE EDMUND MELENEY, A.M.....	<i>Professor in the Teachers College</i>
ROBERT ARROWSMITH, Ph.D.....	<i>Professor in the Teachers College</i>
FRANK THOMAS BAKER, A.M.....	<i>Professor in the Teachers College</i>

General Statement

The courses of this department fall into two divisions, those on Philosophy and those on Education. In each division are courses intended primarily for undergraduates. These are best described as introductory courses, and their aim is to furnish a general acquaintance with the main subdivisions of philosophy and education as a whole. The courses known as Philosophy A, II, III, IX, XIII, and Education I and II, are of this character. By the use of the historical and comparative methods of study and exposition, students in these courses are introduced to a general survey of their respective subjects. While

serving therefore as introductory courses for students proposing to specialize in philosophy and education, they are particularly recommended to those students of law, medicine, political science, natural science, or theology, who wish to acquire some knowledge of philosophy and education as part of a liberal education.

Philosophy A is required of all members of the Junior class in the School of Arts; Philosophy II, III, IX, XIII, Education I and II, are open to Seniors in the School of Arts and other candidates for the degree of A.B.

The remaining courses in each division are intended primarily for advanced students. These courses may only be taken by those who have had the introductory courses, or their equivalent, at some other university. The advanced courses are planned with reference to each other, and a student remaining three years in the department may hear courses that cover the entire range of modern philosophy.

A select number of advanced students, usually candidates for university degrees only, are admitted to the seminaries organized for training in research.

Courses in Philosophy

A (I)—LOGIC AND PSYCHOLOGY—Hyslop's *Elements of Logic*; Baldwin's *Elements of Psychology*, James's *Principles of Psychology*. Lectures, practical exercises, and recitations. 2 hours weekly. Dr. HYSLOP

M. and Th. at 1.30 or Tu. and F. at 1.30

II—ETHICS, INTRODUCTORY COURSE—Lectures, essays, and discussions. 2 hours weekly. Dr. HYSLOP

Tu. and Th. at 2.30

III—GENERAL HISTORY OF PHILOSOPHY—Zeller's *Outlines of Greek Philosophy*, Falckenberg's *History of Modern Philosophy*, and Windelband's *History of Philosophy*. Lectures, essays, and private reading. 2 hours weekly. Professor BUTLER

M. and W. at 2.30

IV—BRITISH PHILOSOPHY FROM LOCKE TO HERBERT SPENCER—History and criticism of the Association psychology and the philosophy of evolution. Locke's *Essay on the Human Understanding*, Berkeley's *Principles of Human Knowledge*, Hume's *Treatise on Human Nature*; the writings of Hartley, Brown, the Mills, and Bain; Herbert Spencer's *First Principles*. Lectures, essays, and private reading. 2 hours weekly. Professor BUTLER

M. and W. at 3.45. [Given in 1894-5, and each alternate year thereafter]

V—THE PHILOSOPHY OF KANT AND HIS SUCCESSORS—Fichte, Schelling, Hegel, Herbart, and Schopenhauer—Lectures, essays, and private reading. 2 hours weekly. Professor BUTLER

M. and W. at 3.45. [Given in 1893-4, and each alternate year thereafter]

VI—SYSTEMATIC ETHICS—Lectures, discussions, and essays. 2 hours weekly. Dr. HYSLOP

M. and W. at 2.30. [Given in 1894-5, and each alternate year thereafter]

VII—PRACTICAL ETHICS—Lectures, private reading, observation, essays, and discussions. 2 hours weekly. Dr. HYSLOP

M. and W. at 2.30. [Given in 1893-4 and each alternate year thereafter]

VIII—CONTEMPORARY PSYCHOLOGISTS—Lectures and readings from the works of Wundt, Volkman, Ribot, Münsterberg, James, and Baldwin, with particular attention to their doctrines of apperception and of the feelings. 1 hour weekly during March, April, and May. Professor BUTLER

Fr. at 4.30. [Not given in 1893-4]

IX—PHYSIOLOGICAL PSYCHOLOGY, INTRODUCTORY COURSE—Lectures and laboratory work. 3 hours weekly. Dr. FARRAND

M., W., and F. at 10.30, Psychological laboratory

X—PHYSIOLOGICAL PSYCHOLOGY, ADVANCED COURSE—Lectures and laboratory work. 2 hours weekly. Dr. FARRAND

Tu. and Th. at 10.30, Psychological laboratory

XI—MENTAL PATHOLOGY ; ABNORMAL AND COMPARATIVE PSYCHOLOGY—Lectures, essays, and discussions. 1 hour weekly. Dr. FARRAND

Th. at 12.30, Psychological laboratory

XII—ANTHROPOLOGY—Lectures, essays, and private reading. 2 hours weekly. Dr. FARRAND

Hours to be arranged. Psychological laboratory

XIII—EXPERIMENTAL PSYCHOLOGY, INTRODUCTORY COURSE—Lectures, themes, and laboratory work. 2 hours weekly. Professor CATTELL

Fr. 11.30-1.30, Psychological laboratory

XIV—EXPERIMENTAL PSYCHOLOGY, ADVANCED COURSE—Laboratory work. 2 hours weekly. Professor CATTELL

Hours to be arranged after consultation with the students

XV—VISION—Lectures, laboratory work, and reports. 2 hours weekly. Professor CATTELL

Tu. 11.30-1.30, Psychological laboratory

XVI—RESEARCH WORK IN EXPERIMENTAL PSYCHOLOGY—

Daily, Psychological laboratory. Professor CATTELL

XVII—PHILOSOPHICAL SEMINAR—Weekly. Professor BUTLER

Th. at 4.30

XVIII—ETHICAL SEMINAR—Weekly. Dr. HYSLOP

W. at 1.30

Courses in Education

I—HISTORY OF EDUCATIONAL THEORIES AND INSTITUTIONS : Aristotle and the ancient educational ideals, Alcuin and the rise of the Christian schools, Abelard and the foundation of the universities, Loyola and the educational system of the Jesuits ; the educational reformers, Rousseau, Pestalozzi, and Froebel ; Herbart and the philosophical study of education—Lectures, essays, and private reading. 1 hour weekly. Professor BUTLER

Th. at 3.45. [Given in 1894-5 and each alternate year thereafter]

II—PRINCIPLES OF EDUCATION : psychology of childhood, didactics, the ethical and religious element in education—Lectures, essays, and private reading. 1 hour weekly. Professor BUTLER

Th. at 3.45. [Given in 1893-4 and each alternate year thereafter]

III—EDUCATIONAL SEMINAR—1 hour weekly. Professor BUTLER
Hour arranged after consultation with students

The following courses are given at the Teachers College, 9 University Place :

IV—EDUCATIONAL PSYCHOLOGY : study of children—Lectures, observations, reports, and private reading. 2 hours weekly. Professor REIGART

Tu. at 10.50, Th. at 11.35

V—METHODS OF TEACHING IN THE ELEMENTARY SCHOOL—Lectures, observations, and practical exercises. 1½ hours weekly. Professor MELENEY

W. and F. at 10.50

VI—HISTORY OF EDUCATION, INTRODUCTORY COURSE—Critical reading of educational classics—Lectures, essays, and discussions. 1 hour weekly. Professor REIGART

W. and F. at 11.35

VII—INSTITUTES OF EDUCATION ; Laurie's Institutes of Education, Rosenkrand's Philosophy, of Education, and Herbart's Science of Education—Lectures, essays, and private reading. 1 hour weekly. Professor HERVEY

Sat. at 9.30

VIII—METHODS OF TEACHING ENGLISH IN SECONDARY SCHOOLS—The study of literature ; methods of teaching English composition and the formation of good style. Lectures, essays, and practical exercises. 2 hours weekly, second half year. Professor BAKER

Sat. at 10.30

IX—METHODS OF TEACHING HISTORY IN SECONDARY SCHOOLS—2 hours weekly, first half year. Lectures. MISS LUCY M. SALMON, Professor of History in Vassar College

Sat at 10.30

(In 1893-4 this course is only open to students registered through Barnard College.)

X—METHODS OF TEACHING SCIENCE IN ELEMENTARY AND SECONDARY SCHOOLS—Lectures, essays, and practical exercises. 3 hours weekly. Professor WOODHULL

Hours to be arranged

XI—METHODS OF TEACHING MANUAL TRAINING IN ELEMENTARY AND SECONDARY SCHOOLS—Lectures, essays, and practical exercises. 4 hours weekly. Professor BENNETT

XII—METHODS OF TEACHING LATIN AND GREEK—Lectures, essays, and practical exercises. 1 hour weekly. Professor ARROWSMITH

Sat. at 9.30

XIII—METHODS OF TEACHING FRENCH AND GERMAN—Lectures, essays, and practical exercises. 1 hour weekly. Professor ——
[To be given in 1894-5]

XIV—READING AND DISCUSSION OF GERMAN AND FRENCH WORKS ON EDUCATION IN THE ORIGINAL TEXT—Lectures, essays, and discussions. 2 hours weekly. Professor ——
[To be given in 1894-5]

XV—METHODS OF TEACHING EDUCATIONAL PSYCHOLOGY—Lectures, essays, observation, and practical exercises. 2 hours weekly. Professor REIGART
Hours to be arranged

XVI—PRACTICE IN TEACHING AND SCHOOL SUPERVISION—Lectures, reports, and practical exercises. 3 hours weekly. Professor MELENEY

Equipment

The equipment of the department is very complete and constantly being added to. It includes library facilities, laboratories of experimental and physiological psychology, the Horace Mann School for observation and practice, and the beginnings of an educational museum.

Every journal of importance, American and foreign, dealing with philosophy, psychology, ethics, or education, is taken regularly by the College library. Any book needed by an advanced student can usually be bought at once.

Students of Education have also at their disposal the Bryson Library at the Teachers College, 9 University Place. The collection now numbers more than 5000 volumes, and is constantly being added to. The main purpose of the library is to afford special students of Education opportunities for study and research.

The psychological laboratory is situated on the fourth floor of the building known as the President's House, and consists of a lecture-room and general laboratory and three smaller rooms for special research, including a dark room for work on vision. The small rooms allow students to work alone and without interruption at all hours during the day. The laboratory has windows to the north, east, south, and west, and is supplied with electric light for experimental purposes and electric power.

The collection of psychological apparatus is, perhaps, not surpassed by any in this country or in Europe. Three thousand dollars have recently been appropriated for this collection by the Trustees of the College, and, in addition, apparatus which cost \$1200 is in use. The apparatus has been secured with a view to a series of experiments, such as is carried out by the students attending the introductory course, and with a view to special researches.

The exceptionally fine collection of apparatus belonging to the department of Physiology is also available for the use of students in this department.

For students of Education an opportunity for observation and practice in teaching is afforded that is quite unique either in this country or in Europe. This is given in the school of observation and practice known as the Horace Mann School, which is maintained by the Teachers College for this purpose.

In this school every phase of school work, including the high school as well as the kindergarten and the elementary school, is to be found in operation. Opportunities for practice in teaching and supervision are afforded to qualified students.

The New York Philosophical Society, consisting largely of graduates and advanced students in this department, holds six meetings during the winter. It offers an excellent opportunity for training in the discussion of philosophical questions.

PHYSICS

OGDEN N. ROOD, A.M.....	<i>Professor</i>
WILLIAM HALLOCK, A.B., Ph.D.....	<i>Adjunct Professor</i>
HOLBROOK CUSHMAN, A.B.....	<i>Instructor</i>
REGINALD GORDON, A.B.....	<i>Tutor</i>
HERSCHELL C. PARKER, Ph.B.....	<i>Tutor</i>
ASA S. IGLEHART, A.B.....	<i>Assistant</i>
CHARLES C. TROWERIDGE, B.S.....	<i>Assistant</i>
HENRY S. CURTIS, A.B.....	<i>Assistant</i>
HERBERT T. WADE, A.B.....	<i>Assistant</i>

General Statement

Of the courses offered by the department, Course I is required of all first-year students in the School of Mines; Course III is required of second-year students, candidates for the degree of Electrical Engineering, and as to lectures for the first term, with two hours a week laboratory work for both terms, of second-year students, candidates for the degrees of B.S., C.E., and M.E. in the School of Mines. Courses I, II, IV, and V, and Course III as to the lectures, are elective for Seniors in the School of Arts; Courses II and V for Juniors in the same school, and Courses IV and V for candidates for the A.M. and Ph.D. degrees in their first year.

Courses

I—GENERAL PHYSICS—First term, Sound and Heat; second term, Light and Electricity. 3 hours lectures. Professor ROOD and Mr. GORDON

II—GENERAL PHYSICS—First term, Sound; second term, Magnetism and Electricity. 2 hours lectures and 2 hours laboratory. Professor ROOD

III—ELECTRICITY—Absolute system of mechanical and electrical units; electrical measurements; the derivation and use of the Ampere, Volt, Ohm, Joule, and Watt; the Farad, Coulomb, and units of electric and magnetic induction. 2 hours lectures, eight hours laboratory. Professor HALLOCK

IV—LIGHT AND HEAT—Velocity, reflection, refraction, and dispersion of light; achromatism, optical instruments, the eye, and Young's theory of color; expansion of solids, liquids, and gases; conduction, specific heat, tension of

vapors, and radiant heat. 3 hours lectures, 2 or 4 hours laboratory. Professor Rood

V—SOUND AND ELECTRICITY—Velocity, reflection, refraction, and interference of sound ; vibrating strings and rods ; organ pipes, the voice, ear, and telephone ; frictional and voltaic electricity ; magnetism, electrical conduction and induction. 2 hours lectures, 6 hours laboratory. Professor Rood

Note—Laboratory courses, consisting of personal instruction, reading, and experimental investigation, will be arranged for advanced students according to their individual needs. These courses vary in difficulty with amount of time necessary according as the student is a candidate for the degree of A.M. or Ph.D., and according as he pursues physics as a major or a minor subject

Equipment

The department of Physics occupies nine rooms, five being devoted to general physical measurements, two to lectures and lecture apparatus, and two to special and advanced work. The rooms are supplied with the street current of the Edison incandescent system, gas, and other appliances.

Among the many pieces of apparatus the following may be especially mentioned :

For measurements of length, three linear and three circular dividing engines, a Geneva Society comparator and dividing engine ; a Grunow cathetometer, spherometers, optical levers, and micrometers of many kinds.

For measurements of mass, eight balances with weights, specific gravity apparatus, hydrometers, aërometers, Westfall and Jolly balances, and the various forms of vapor density apparatus.

Standard mercurial barometers, aneroid and Mariotti barometers, Kater's and Borda's pendulums, and apparatus for studying elasticity ; also a monochord, Quincke's apparatus, Kundt's dust figure apparatus, and sets of organ pipes and tuning-forks for the study of sound. Thermometers and apparatus for calibration and determination of zero and boiling points ; also apparatus for the determination of co-efficients of expansion, for latent and specific heats, and for air-thermometry and calorimetry.

The optical rooms are furnished with eight spectrometers of different designs, small telescopes, opera glasses, microscopes, sets of lenses, prisms, gratings, a goniometer, sextant, optical benches, photometers, saccharimeters, total reflectometers and apparatus for calorimetry, polarized light, and spectroscopy.

In the rooms devoted to electricity are nine galvanometers of various patterns, high and low resistance, ballistic and dampened ; electrometers, magnetometers, rheostats, and bridges of all types ; condensers, batteries, keys, arc and incandescent lamps, ammeters, and voltmeters.

The workshop is furnished with a lathe, planer, grinding machine, vises, carpenters' and machinists' benches, and tools for work in metal, wood, and glass. Advanced students are taught and encouraged to repair, alter, and construct apparatus needed for their special work.

PHYSIOLOGY

JOHN GREEN CURTIS, M.D	<i>Professor</i>
FREDERIC SCHILLER LEE, Ph.D.....	<i>Demonstrator</i>

Courses

I—GENERAL PHYSIOLOGY—Structure of protoplasm ; physiology of the cell ; irritability ; contractility ; heliotropism ; physiological division of labor and evolution of special functions ; general principles of secretion ; the nerve cell ; the germ cells. Lectures, 1 hour a week. DR. LEE

Elective for Seniors who have had at least one year of General Biology.

II—HUMAN PHYSIOLOGY AS RELATED TO THAT OF OTHER MAMMALS AND OF LOWER VERTEBRATES—Lectures and demonstrations, 4 to 5 hours a week. Professor CURTIS and Dr. LEE

Required, in the first and second years, of candidates for the degree of M.D.

Elective for Seniors in the School of Arts. Open as a minor to candidates for the degree of A.M. ; and as a minor, in the first year, to candidates for the degree of Ph.D.

III—LABORATORY COURSES—Personal instruction, private reading, practical work, and, in some cases, research. No definite number of hours a week. Professor CURTIS and Dr. LEE

Optional for qualified candidates for the degree of M.D. Open as major or minor courses to qualified candidates for the degree of A.M., or of Ph.D.

Research

IV—THE LABORATORY is open for research, under the direction of its officers, to advanced workers. No definite number of hours a week. Professor CURTIS and Dr. LEE

Fellowships

For the University and Alumni Association fellowships open to persons desiring to do special work under the Professor of Physiology, see table of contents.

Equipment

The department of Physiology possesses :

(1) The main laboratory, for research and the preparing of demonstrations, covering 1769 square feet and lighted on three sides.

(2) Two rooms for optical or psychological work or for photography, communicating with the main laboratory and with one another. One of these has a free southerly exposure for the heliostat.

(3) The Swift Physiological Cabinet, for the accommodation of a specially endowed and very full collection of apparatus of precision, mainly for research. Here demonstrations are held also.

(4) A smaller laboratory, for the officers of the department.

(5) Easy access to a large lecture-room, specially fitted for experimental teaching ; and to three demonstration-rooms for small classes.

The physiological journals in English, German, and French are accessible at the laboratory to advanced students ; also the most important monographs and other books, both modern and ancient.

A skilled mechanic is employed to devote his entire working time, at the laboratory, to the care and improvement of the plant, including the making, altering, and repairing of special apparatus. He also assists in the scientific manipulations.

The following machines and apparatus deserve mention :

An upright seven-horse-power steam-engine, mounted against a pier upon an iron bracket, to avoid floor vibrations, and working a shaft which runs the whole length of the main laboratory ; two steam lathes ; apparatus worked by steam for artificial respiration ; Ludwig's "schlagwähler" ; kymograph for the long roll of paper, and high-speed drum kymograph, both worked by steam ; high-speed drum kymograph worked by weights ; two drum kymographs of the spring pattern ; three "Basel stands" for the fine adjustment of recording levers ; Zeiss scales and other instruments for reading and measuring curves, including a planimeter ; electro-magnetic chronographs and control-hammer ; seconds pendulum ; interrupter clock ; automatic dry-contact tuning forks ; short-beam quantitative balance ; copper voltameter ; milliampère- and ampère-meters ; Wiedemann-duBois galvanometer, with coils of high and low resistance, Haüy's bar, telescope, and milk-glass scale ; capillary electrometers ; Ohmmeter, for resistances of from 0.001 to 200,000 ohms ; Edelmann's faradimeter ; five horizontal duBois induction coils ; two upright ditto ; a complete collection of duBois Reymond's apparatus ; moist chambers and muscle levers ; upright rheochord ; mechanical tetanomotor ; differential rheotome ; Marey's tambours, cardiographs, stethograph, and explorer of the human muscles ; sphygmographs ; plethysmograph ; two recording mercurial manometers ; spring manometers ; tonographs ; "stromuhr" ; frog-heart apparatus ; thermo-electric apparatus ; constant-pressure injection apparatus ; two mercurial gas pumps ; large spectroscope ; direct vision spectroscope ; Ladd spectroscope ; four microspectroscopes ; heliostat ; eight microscopes ; aquarium.

PRACTICE OF MEDICINE

FRANCIS DELAFIELD, M.D., LL.D.....	<i>Professor</i>
WILLIAM H. DRAPER, M.D.....	<i>Professor of Clinical Medicine</i>
JAMES WEST ROOSEVELT, M.D.....	<i>Clinical Lecturer</i>
WALTER B. JAMES, M.D.....	<i>Clinical Lecturer</i>
FRANK W. JACKSON, M.D.....	<i>Chief of Clinic and Instructor in Physical Diagnosis</i>
GEORGE ROE LOCKWOOD, M.D.....	<i>Clinical Assistant and Instructor in Physical Diagnosis</i>
WILLIAM K. DRAPER, M.D.....	<i>Clinical Assistant</i>
THOMAS S. SOUTHWORTH, M.D.....	<i>Clinical Assistant</i>
VAN HORNE NORRIE M.D.....	<i>Clinical Assistant</i>

Courses

I—THE PRACTICE OF MEDICINE—Didactic lectures, 2 hours a week for five months, and 3 hours a week for three months. Professor DELAFIELD

Required, in the second and third years, of candidates for the degree of M.D.

II—CLINICAL LECTURES ON GENERAL MEDICINE AT THE VANDERBILT CLINIC.—1 hour a week throughout the academic year. Professor DELAFIELD Th., at 3 P.M.

Required, in the second year, of candidates for the degree of M.D.

III—PHYSICAL DIAGNOSIS—Practical Instruction; twenty-one lessons for each student. Drs. JACKSON and LOCKWOOD

Required, in the second year, of candidates for the degree of M.D.

IV—HOSPITAL CLINICS IN GENERAL MEDICINE—Roosevelt Hospital. Professors DELAFIELD and DRAPER and Dr. ROOSEVELT

M., at 4 P.M., throughout the academic year

New York Hospital. Professors DRAPER and PEABODY. (See "Materia Medica and Therapeutics")

M. and Th. at 2:30 P.M., in November, December, January, February, and March

Bellevue Hospital. Drs. ROOSEVELT and JAMES, and Professor JACOBI (see "Children, Diseases of")

Tu. at 1.30 P.M. throughout the year

Attendance at Hospital Clinics is optional in the second and third years for candidates for the degree of M.D.

ROMANCE LANGUAGES AND LITERATURE

ADOLPHE COHN, LL.B., A.M.....	<i>Professor</i>
HENRY ALFRED TODD, Ph.D.....	<i>Professor of Romance Philology</i>
CARLO LEONARDO SPERANZA, LL.B., A.M.....	<i>Instructor</i>
BENJAMIN DURYEA WOODWARD, Ph.D.....	<i>Tutor</i>
LOUIS MARIE AUGUSTE LOISEAUX.....	<i>Tutor</i>

General Statement

The department of the Romance Languages and Literatures has charge of all the courses of instruction and research, both in the School of Arts and in the School of Philosophy, dealing with the various languages that sprang from Latin after the unity of the Roman Empire was destroyed by the Germanic invasions of the fourth and fifth centuries after Christ. Chief among these languages are French, Italian, and Spanish, but several other idioms, of great philological and literary interest, some of them, like Portuguese and Rumanian,

spoken in our own day by nations the importance of which is rather increasing than decreasing, are also included in the family.

The department offers: (1) to students in the School of Arts, practical instruction in French, Italian, and Spanish, courses in French, Italian, and Spanish literature, and elementary instruction in Romance philology; (2) to students in the School of Philosophy, advanced instruction in literature and in Romance philology, and also instruction of a pedagogical character.

Although no course in philology proper is offered to the members of lower classes in the School of Arts, it should be stated that from the very start care is taken that as far as possible the students be put in possession of the historical sequences that account for the present state of the languages of the group, so as to furnish a solid foundation for grammatical knowledge, and to awaken, in some students at least, a taste for philological research.

Course VI in this department is given by Professor Brander Matthews of the Department of Literature.

Courses in French

ELEMENTARY COURSE—Books: Edgren's *Grammar*; Joynes' *Classic French Fairy Tales*; Halévy's *L'Abbé Constantin*; Grandgent's *Materials for French Composition*; G. de Peyrebrune's *Les Frères Colombe*. 3 hours a week, first term. Mr. LOISEAUX

Intended for students who have not studied French before entering college, and who are willing to work hard enough to be able to join Course A at the beginning of the second term. Cannot be counted for a degree.

A—GRAMMAR, READING, COMPOSITION—Books: Edgren's *French Grammar*; Storr's *Hints on French Syntax*; Mérimée, *Colomba*; About, *La Mère de la Marquise*; G. Sand, *Nanon*; Sandeau, *Mlle. de la Seiglière*; Labiche, *Le Voyage de M. Perrichon*; Augier and Sandeau, *Le Gendre de M. Poirier*; Molière, *Le Bourgeois Gentilhomme*. 3 hours a week. Mr. LOISEAUX and Dr. WOODWARD

Course A is prescribed for Freshmen who do not take German A or its equivalent.

B—GENERAL INTRODUCTION TO THE STUDY OF FRENCH LITERATURE—Books: Corneille, *Le Cid*; Racine, *Andromaque*; Molière, *Les Femmes Savantes*; La Fontaine, *Fables*; Mme. de Sévigné, *Lettres Choiesies*; Bernardin, *Extraits d'Auteurs du XVIIIe Siècle*; Voltaire, *Zaïre*, *Le Siècle de Louis XIV*; Beaumarchais, *Le Barbier de Séville*; Bowen, *Modern French Lyrics*; Victor Hugo, *Hernani*; Sainte-Beuve, *Extraits des Causeries du Lundi*; Gazier, *Petite Histoire de la Littérature Française*. 3 hours a week. Dr. WOODWARD

Course B is prescribed for Sophomores who have taken French A in the Freshman year, unless Chemistry I is substituted in its place.

I—FRENCH RHETORIC—Study of the rules of French prose and verse composition. Books: G. Lanson, *Conseils sur l'Art d'Écrire*; G. Crouslé, *Grammaire Française, Cours Supérieur*; E. Legouvé, *La Lecture en Action*;

Thieulin et le Goffic, *Traité de Versification Française*; La Fontaine, *Fables*; Ernest Renan, *Pages Choieses*. 3 hours a week. Professor COHN and Mr. LOISEAUX

Course I is open to students who have taken Course B or its equivalent.

II—HISTORY OF FRENCH LITERATURE IN THE 17TH CENTURY—Lectures, essays, and outside reading. Books: Descartes, *Discours de la Méthode*; Pascal, *Les Provinciales* (letters 1, 4, 13, édition Brunetière, Paris, Hachette); Corneille, *Théâtre Choisi*; Molière, *Œuvres Complètes*; Racine, *Œuvres Complètes*; Boileau, *l'Art Poétique*; Bossuet, *Oraisons Funèbres*; La Rochefoucauld, *Maximes*; La Bruyère, *Les Caractères*. 3 hours a week. Professor COHN

Course II is open to students who have taken Course B or its equivalent.

All the following, down to Course XV, are open only to students who have taken Course II or its equivalent

III—HISTORY OF FRENCH LITERATURE IN THE 18TH CENTURY—Lectures, essays, and outside reading. Books: Voltaire, *Théâtre Choisi* (including *Zaïre*, *Mérope*, *Brutus*, *Mahomet*, *Tancrède*); *Zadig*, *Traité de La Tolérance*; *Lettres Philosophiques* (extracts); *Dictionnaire Philosophique* (extracts); *Correspondence* (extracts); Rousseau, *Discours sur les Sciences et les Arts*, *Discours sur les Fondements de l'Inégalité parmi les hommes*, *Lettre sur les Spectacles*, *Emile* (Livre IV); Montesquieu, *Lettres Persanes*, *Esprit des Lois* (first five books and extracts, edited by Paul Janet, Paris, Delagrave); Beaumarchais, *Mémoires*, *Mariage de Figaro*; Condorcet, *Vie de Voltaire*. 3 hours a week. Professor COHN

IV—History of French poetry in the first half of the nineteenth century, especially Victor Hugo and the Romantic movement. Lectures, essays, and outside reading. Books: Lamartine, *Méditations*; Victor Hugo: *Preface to Cromwell*, *Hernani*, *Marion Delorme*, *Le Roi s'amuse*, *Ruy Blas*, *Les Burgraves*, *Odes et Ballades*, *Les Châtiments*; Alfred de Musset, *Poésies Nouvelles*; Georges Pellissier, *Le Mouvement Littéraire au XIXe Siècle*. 1 hour a week. Professor COHN

V—HISTORY OF LITERARY CRITICISM IN FRANCE, ESPECIALLY SAINTE-BEUVE—Lectures, essays, and outside reading. Books: Sainte-Beuve, *Portraits Littéraires* (extracts), *Portraits Contemporains* (extracts), *Causeries du Lundi* (extracts), *Nouveaux Lundis* (extracts); Brunetière, *L'Evolution des Genres dans l'Histoire de la Littérature* (vol. I). 1 hour a week. Professor COHN

VI—THE FRENCH DRAMATISTS OF THE 19TH CENTURY—2 hours a week. Professor BRANDER MATTHEWS.

(Not given in 1893-4. To be given in 1894-5.)

VII—STUDY OF THE WRITERS OF THE 16TH CENTURY, ESPECIALLY MONTAIGNE—Books: Darmesteter and Hatzfeld, *Le seizième Siècle en France*; Montaigne, *Essais*. 1 hour a week. Mr. LOISEAUX

VIII—THE FRENCH CHRONICLERS OF THE MIDDLE AGES—Villehardouin, Joinville, Froissart, Commines. Books: *Extraits des Chroniqueurs Français*, publiés par Gaston Paris et A. Jeanroy; *La Littérature Française au Moyen Âge*, par Gaston Paris. 1 hour a week. Dr. WOODWARD

IX—THE TROUVÈRE WACE AND THE ROMAN DE ROU—1 hour a week. Dr. WOODWARD

(Not given in 1893-4.)

X—THE ARTHURIAN LEGENDS IN FRENCH LITERATURE—Practical exercises in the reading and interpreting of old French. Old French grammar. 1 hour a week. Professor TODD

XI—THE CHANSON DE ROLAND AND THE CAROLINGIAN EPICS—Practical exercises in the reading and interpreting of old French. Old French grammar. Critical investigations in textual criticism. Lectures on mediæval French literature. Books: Clédar, *La Chanson de Roland (texte français)*; Gaston Paris, *Extraits de la Chanson de Roland*; Foerster, *Altfranzösisches Übungsbuch (first supplement, Rolandmaterialien)*. 2 hours a week. Professor TODD

XII—INTRODUCTION TO THE STUDY OF ROMANCE PHILOLOGY—Lectures and essays. 2 hours a week. Professor TODD

XIII—THE FRENCH ELEMENT IN THE ENGLISH LANGUAGE—1 hour a week. Dr. WOODWARD

(Not given in 1893-4.)

XIV—METHODS OF TEACHING FRENCH—2 hours a week. Professor COHN

(Not given in 1893-4.)

XV—SEMINAR: INVESTIGATIONS OF SPECIAL TOPICS IN FRENCH LITERATURE AND PHILOLOGY—2 hours a week. Professors COHN and TODD

Optional Courses

FRENCH CONVERSATION (elementary course)—1 hour a week. Mr. LOISEAUX

FRENCH CONVERSATION (advanced course)—1 hour a week. Mr. LOISEAUX

Courses in Italian

I—ELEMENTARY WORK—Grammar, reading, composition. Books: Grandgent, *Italian Grammar*; Grandgent, *Italian Composition Book*; Puccianti, *Antologia della Prosa Italiana Moderna*. 3 hours a week. Mr. SPERANZA

(Open to Juniors. Open also to Freshmen and Sophomores, but only after they have shown their ability to pass the final examinations in French B and German B.)

II—COMPOSITION, PROSE, AND POETRY OF THE 16TH CENTURY—Machiavelli, Firenzuola, Ariosto, Tasso. Modern prose and poetry. 3 hours a week. Mr. SPERANZA

(Not given in 1893-4.)

III—COMPOSITION, PROSE, AND POETRY OF THE 14TH CENTURY—Dino Compagni's *Cronica*; Boccaccio's *Decamerone*; Petrarch's *Canzonere*; Dante's *Lyrics*. 3 hours a week. Mr. SPERANZA

(Not given in 1893-4.)

IV—CRITICAL STUDY OF DANTE'S DIVINA COMMEDIA, Principally from the standpoint of art—2 hours a week. Mr. SPERANZA

V—DANTE'S DIVINA COMMEDIA, CONTINUED

(Not given in 1893-4. Will be given in 1894-5.)

Courses in Spanish

I—ELEMENTARY COURSE—Grammar, reading, composition. Books: Knapp, *Spanish Grammar*; Knapp, *Spanish Readings*; Valera, *Pepita Jimenez*. 3 hours a week. Professor TODD

(Open to Juniors; open also to Freshmen and Sophomores, but only after they have shown their ability to pass the final examinations in French B and German B.)

II—DON QUIJOTE AND THE LITERATURE OF THE GOLDEN AGE—3 hours a week. Mr. SPERANZA

III—CRITICAL STUDY OF THE LITERATURE OF THE GOLDEN AGE—3 hours a week. Professor TODD

(Not given in 1893-4.)

IV—THE ORIGINS OF SPANISH POETRY—2 hours a week. Professor TODD

(Not given in 1893-4.)

N.B.—Weekly lectures in French, Italian, and Spanish, open to all members of the university, are given by the members of the department and by distinguished European lecturers.

The Romance Club, which consists of all the instructors and advanced students in the department, holds fortnightly meetings in which the latest contributions to philology and literature in the field of the department are reported upon and discussed.

Equipment

The Library of Columbia College contains a large number of works in French, English, German, Italian, and Spanish bearing upon the study of Romance languages and literatures. It is especially rich in periodicals. In addition to the books and collections in the library the department has at its disposal the very valuable library of Mr. John Edward Kerr, Jr., of New York City, which is perhaps the finest collection to be found in this country of works relating to the legend of Tristan in connection with the romances of the Round Table. This collection is now deposited in room 8, No. 52 East 49th Street.

SURGERY

WILLIAM TILLINGHAST BULL, M.D.....	<i>Professor</i>
R. F. WEIR, M.D.....	<i>Professor</i>
CHARLES MCBURNEY, M.D.....	<i>Professor of Clinical Surgery</i>
FRANK HARTLEY, M.D.....	<i>Clinical Lecturer and Instructor in Operative Surgery</i>
FRANCIS HARTMAN MARKOE, M.D.....	<i>Clinical Lecturer</i>
BERN BUDD GALLAUDET, M.D.....	<i>Clinical Lecturer</i>
B. FARQUHAR CURTIS, M.D.....	<i>Chief of Clinic and Instructor in Minor Surgery</i>
CHARLES T. PARKER, M.D.....	<i>Assistant Instructor in Operative Surgery</i>
ELLSWORTH ELIOT, Jr., M.D.....	<i>Clinical Assistant</i>
CHARLES NORTH DOWD, M.D.....	<i>Clinical Assistant</i>
JOSEPH AUGUSTUS BLAKE, M.D.....	<i>Clinical Assistant</i>
PERCY RANNEY BOLTON, M.D.....	<i>Clinical Assistant</i>
WALTER BENSEL, M.D.....	<i>Clinical Assistant</i>
CHARLES LANGDON GIBSON, M.D.....	<i>Clinical Assistant</i>
LOUIS IRVING MASON, M.D.....	<i>Clinical Assistant</i>

Courses

I—SURGICAL PATHOLOGY, GENERAL AND REGIONAL SURGERY—Didactic lectures, 3 hours a week throughout the academic year. Professors BULL and WEIR

Required, in the second and third years, of candidates for the degree or M.D.

II CLINICS IN GENERAL SURGERY AT THE VANDERBILT CLINIC—I hour a week throughout the year. Professors BULL and WEIR
M. at 12 M.

Required, in the second year, of candidates for the degree of M.D.

III—MINOR SURGERY AND BANDAGING—Practical instruction at the Vanderbilt Clinic. 12 lessons for each student. Dr. B. F. CURTIS

Required, in the second year, of candidates for the degree of M.D.

IV—OPERATIVE SURGERY UPON THE CADAVER—Practical instruction to classes of six members each. Each student performs for himself upon the cadaver the principal operations, including the ligation of arteries, amputations, resections, and the removal of parts. Special attention is paid to operations upon the abdominal viscera. 13 to 14 lessons for each student. Drs. HARTLEY and PARKER

Optional, in the third year, for candidates for the degree of M.D.

V—HOSPITAL CLINICS IN GENERAL AND OPERATIVE SURGERY—New York Hospital

Sat. at 2.30 P.M. throughout the academic year. Professors BULL and WEIR

W. at 2.30 P.M. from February to June. Professor WEIR

Th. at 3 P.M. from February to June. Dr. HARTLEY

Roosevelt Hospital, Syms Operating Theatre

Sat. at 2.30 P.M. throughout the academic year. Professor MCBURNEY

Bellevue Hospital

Th. at 2.30 P.M. throughout the academic year. Drs. F. H. MARKOE and GALLAUDET

St. Luke's Hospital

Th. at 2.30 P.M. from October to January. Dr. B. F. CURTIS

F. at 2.30 P.M. from October to February. Dr. F. H. MARKOE

Cancer Hospital

Th. at 2.30 P.M. from February to May. Dr. B. F. CURTIS

Attendance at Hospital Clinics is optional in the second and third years for candidates for the degree of M.D.

VENEREAL DISEASES

ROBERT W. TAYLOR, M.D.....	<i>Clinical Professor</i>
JAMES R. HAYDEN, M.D.....	<i>Chief of Clinic</i>
ROBERT H. GREENE, M.D.....	<i>Clinical Assistant</i>
WILLIAM C. GILLEY, M.D.....	<i>Clinical Assistant</i>
EDMOND Y. HILL, M.D..	<i>Clinical Assistant</i>
JOHN VAN DER POEL, M.D.....	<i>Clinical Assistant</i>
JOHN B. STEIN, M.D....	<i>Clinical Assistant</i>

Courses

I—VENEREAL AND GENITO-URINARY DISEASES—Clinical lectures at the Vanderbilt Clinic. 1 hour a week throughout the academic year. Professor TAYLOR

Required, in the third year, of candidates for the degree of M.D.

II—PRACTICAL INSTRUCTION AT THE VANDERBILT CLINIC IN THE DIAGNOSIS AND TREATMENT OF VENEREAL AND GENITO-URINARY DISEASES—6 lessons for each student. Dr. HAYDEN

Optional, in the third year, for candidates for the degree of M.D.

III—HOSPITAL CLINICS IN VENEREAL AND GENITO-URINARY DISEASES. Bellevue Hospital

Tu. at 2 P.M. throughout the academic year. Professor TAYLOR

City Hospital, Blackwell's Island (formerly Charity Hospital)

W. at 2 P.M., October 1 to January 1. Dr. HAYDEN

The Hospital Clinics are optional, in the third year, for candidates for the degree of M.D.

REGULATIONS FOR THE UNIVERSITY DEGREES OF MASTER OF ARTS, DOCTOR OF PHILOSOPHY, AND MASTER OF LAWS.

Candidates for these degrees are governed by the regulations established by the University Council, and by the supplemental regulations established by the several University Faculties with the approval of the Council.

Regulations for the Degrees of Master of Arts and Doctor of Philosophy

1. Any student who has taken his baccalaureate degree, either in Columbia College, or in some other college maintaining an equivalent curriculum (every such case of equivalence to be considered on its own merits), shall be entitled, with the approval of the President, to become a candidate for the degrees of Master of Arts and Doctor of Philosophy, or either of them; provided, that candidates for these degrees, when they are taken in science and based upon a preparatory scientific training only, are required to pursue, for not less than one year, a minor subject under the direction of either the Faculty of Philosophy or the Faculty of Political Science.

2. Each student who declares himself a candidate for the Degrees of Master of Arts and Doctor of Philosophy, or either of them, shall, immediately after registration, designate one principal or major subject and two subordinate or minor subjects, which, when approved by the Faculty or Faculties in whose jurisdiction the subjects lie, shall be the studies of his university course. Should the subjects designated by the candidate fall within the jurisdiction of more than one University Faculty, the candidate's selection must receive the sanction of the President before it is recorded.

3. Candidates for the degrees of Master of Arts and Doctor of Philosophy must pursue their studies in residence for a minimum period of one and two years, respectively, under the direction of the professors and other officers of instruction in charge of the subjects selected by the candidates as major and minor, attending such lectures as may be designated, and performing faithfully such other work in connection therewith as may from time to time be prescribed. Residence at other universities will be duly credited to a candidate, but no degree will be conferred upon any student who has not been in residence at Columbia College for at least one term or session.

4. The subjects from which the candidate's selection must be made are :

UNDER THE FACULTY OF PHILOSOPHY—Logic, psychology, ethics, history of philosophy, history of education, science and art of teaching, Greek language and literature, Greek archæology and epigraphy, Latin language and literature, Roman archæology and Latin epigraphy, English language and literature, Anglo-Saxon, Gothic, High German language and literature (including Modern, Middle, and Old), Low German language and literature (including Old Saxon, Frisian Dutch, and Flemish), Scandinavian language and literature (including Old Norse, Icelandic, Swedish, and Danish), Romance philology, Romance literatures, comparative study of literature (including the philosophy of literature), Sanskrit language and literature (Vedic and Classical), the Iranian languages and literatures, and any two of the following : Hebrew language and literature, Arabic language and literature, Syriac language and literature, Assyrio-Babylonian language and literature, Ethiopic language and literature, Semitic epigraphy.

In his choice of subjects under this Faculty, the candidate is limited by the regulation that not more than two of the three subjects may be selected from those offered by any one department. A major subject will involve attendance at lectures and seminars amounting to four or more hours weekly ; a minor subject will involve attendance of two or more hours weekly.

UNDER THE FACULTY OF POLITICAL SCIENCE—

Group I.—History and Political Philosophy : 1. European history ; 2. American history ; 3. political philosophy.

Group II.—Public Law and Comparative Jurisprudence : 1. constitutional law ; 2. international law ; 3. criminal law ; 4. administrative law ; 5. comparative jurisprudence.

Group III.—Economics and Social Science : 1. political economy and finance ; 2. sociology and statistics.

In his choice of subjects under this Faculty, the candidate is limited by the regulation that not more than two of the three subjects may be selected from any one of the above groups, and by the following rules :

Candidates offering European History as the major subject, must offer American History as one of the minor subjects, and *vice versa*.

Candidates offering Political Economy and Finance as the major subject, must offer Sociology and Statistics as one of the minor subjects, and *vice versa*.

Candidates will not be permitted to offer Constitutional Law alone as the major subject for the degree of Doctor of Philosophy, but must combine it with the course on General International Law, or on Comparative Administrative Law.

Candidates offering International Law, or Criminal Law, or Administrative Law as the major subject, must take Constitutional Law as one minor subject.

Candidates will not be permitted to offer Criminal Law alone as the major subject for the degree of Doctor of Philosophy, but must combine with it the course on General International Law.

To be recognized as a major subject for the degree of Master of Arts, the courses selected must aggregate at least two hours per week throughout the year, and must also include attendance at a seminar ; for a minor subject for the degree of Master of Arts, the attendance at a seminar is not required.

To be recognized as a minor subject for the degree of Doctor of Philosophy, courses must be taken, in addition to the requirements for a minor subject for the degree of Master of Arts, aggregating two hours weekly. To be recognized as a major subject for the degree of Doctor of Philosophy, all of the courses and seminars offered in that subject must be taken.

UNDER THE FACULTY OF PURE SCIENCE—The subjects represented in this faculty fall under the following heads: Mathematics, Mechanics, Physics, Chemistry, Biology, Botany, Palæontology, Mineralogy, Lithology, Geology, Astronomy, Meteorology, Physical Geography, and Geodesy.

In his choice of subjects under this Faculty, the candidate is limited by the regulation that no two of the subjects selected may be in any one department, unless the consent of the Faculty thereto shall have first been obtained.

UNDER THE FACULTY OF MINES—Engineering, Civil, Mechanical, Electrical and Sanitary, Mining, Metallurgy and Architecture.

5. Immediately on registration each student shall be given a registration book, on which shall be inscribed the name of the student and the date of his enrollment or registration. In this registration book the student shall enter, at the beginning of each academic year or session, the subjects or titles of the several courses of instruction or investigation which he proposes to follow. At the opening exercise of every such course, or as soon thereafter as may be possible, the student shall present to the professor or instructor in charge his registration book, in order that such professor or instructor may enter therein his name and the date of the opening of the course. At the close of every such course followed by the student, the professor or instructor in charge shall again enter in the registration book his name and the date of the closing of the course, if the student has faithfully attended the same, and performed all the duties required of him in connection therewith. At the time of filing his application to be examined for the degrees of Master of Arts and Doctor of Philosophy, or either of them, every candidate must present to the Dean his registration book properly signed and dated, as above prescribed, by the professors or instructors in charge of the several courses which he may have attended, as evidence that he is properly entitled to examination for a degree.

6. Students desiring to be examined as candidates for any degree must make written application for such examination to the Dean of the proper Faculty, on blank forms provided for the purpose. All such applications must be made on or before April 1 of the academic year in which examination is desired.

7. Each candidate for the degree of Master of Arts, in addition to passing satisfactory examinations on prescribed portions of the subjects selected by him as major and minor, shall present an essay on some topic previously approved by the professor in charge of his major subject. Before the candidate is admitted to examination the professor in charge of his major subject must have signified his approval of such essay. The Faculty of Philosophy requires that this essay be presented not later than May 1 of the academic year in which the examination is to take place. The Faculty of Political Science requires this essay to be a paper read during the year before the seminar of which the candidate is a member.

8. Each candidate for the degree of Doctor of Philosophy, in addition to passing satisfactory examinations on the subjects selected by him as major and

minor, shall present a dissertation, embodying the result of original investigation and research, on some topic previously approved by the Faculty. When such dissertation has been approved by the Faculty, it shall be printed by the candidate, and one hundred and fifty copies shall be delivered to the Faculty. On the title-page of every such dissertation shall be printed the words: "Submitted in partial fulfilment of the requirements for the degree of Doctor of Philosophy, in the University Faculty of _____, Columbia College." There shall be appended to each dissertation a statement of the educational institutions that the author has attended, a list of the degrees and honors conferred upon him, as well as the titles of any previous publications.

The several Faculties have delegated the power to approve the subjects chosen for his dissertation by any candidate for the degree of Doctor of Philosophy, as well as the power to approve the dissertation itself, to the professor in charge of the candidate's major subject.

The Faculty of Philosophy requires the submission and approval of the dissertation before the candidate is admitted to examination.

The Faculty of Political Science requires the dissertation to be submitted not later than April 1 of the academic year in which the examination for the degree is desired. With the consent of the Dean and the professor in charge of the candidate's major subject the examination may be held before the printed dissertation is submitted.

The Faculty of Pure Science requires the dissertation to be submitted not later than the third week in March of the academic year in which the examination is desired; and when printed it must be printed in the size and form either of the *Annals* or *Memoirs* of the New York Academy of Sciences, according to the nature of the subject, and must be delivered to the Faculty before the final examination.

9. Every candidate for the degree of Doctor of Philosophy, in addition to passing such other examinations as may be required by the Faculty, shall be subjected to an oral examination on his major subject, and shall defend his dissertation, in the presence of the entire Faculty or of so many of its members as may desire to attend. The ability to read at sight Latin, French, and German is required by the Faculties of Philosophy and Political Science; the ability to read at sight French and German is required by the Faculties of Pure Science and Mines.

10. Students holding college degrees, who shall have completed with marked distinction the entire course of the School of Law, the School of Medicine, or the School of Mines, may be recommended by the Faculty of the School in which they have studied, for the degree of Master of Arts; provided that in each case the candidate present a satisfactory dissertation, and that at least a part of the extra work required of him for the degree of Master of Arts be taken under the direction of either the Faculty of Philosophy or the Faculty of Political Science to the extent of a minor course for not less than one year.

Regulations for the Degree of Master of Laws

1. Any student who has satisfactorily completed the regular course of study in the School of Arts of Columbia College, to the close of the Junior

Year, or in some other college maintaining an equivalent curriculum (every such case of equivalency to be considered on its own merit), shall be entitled to be recommended for the degree of Master of Laws upon certificates from the Faculty of Law and the Faculty of Political Science that he has satisfactorily completed a four years' course of study under said Faculties.

2. Every candidate for the degree of Master of Laws must elect from the subjects offered by said Faculties, courses aggregating in the four years, fifty-two hours per week, and must pass satisfactory examinations upon the subjects elected; provided that not more than thirty-four hours of work may be elected either in the field of Private Law, or in that of Public Law, Social Ethics, History and Economics.

3. Students, otherwise qualified, who have received the degree of Bachelor of Laws from this college after pursuing the full course of study, shall be entitled, upon pursuing for an additional year a course of study of at least thirteen hours per week, under either or both of said Faculties, and passing satisfactory examinations therein, to receive the degree of Master of Laws; provided that no student shall receive the degree who has not studied and passed satisfactory examinations in Comparative Constitutional Law, Administrative Law, Roman Law, International Law, and in the three courses offered on Equity,¹ and who has not pursued here or elsewhere courses of instruction satisfactory to the Faculty of Political Science in History, Social Ethics, and Economics.

4. Each Faculty shall determine the order in which the subjects offered by it shall be taken, and the maximum amount of work to be done therein during any one year.

5. Students from other universities, colleges, or law schools who shall have satisfactorily completed a course of study equivalent to at least one term of thirteen hours per week in the subjects indicated in Section 2, after receiving a Bachelor's degree, may be excused from the corresponding number of terms of the four years' residence required at Columbia, provided that in no case shall any one receive the degree of Master of Laws who has not spent at least four years in the study of the said subjects in some university, college, or law school; and the decision whether work at another institution shall be accepted as equivalent to work at Columbia, shall rest, as far as the studies under the Faculty of Law are concerned, with the Faculty of Law, and as far as the studies under the Faculty of Political Science are concerned, with the Faculty of Political Science. But neither Faculty shall admit a student from another university, college, or law school to examination for the degree of Master of Laws without a residence of at least one term in this University.

¹ Under this provision students would be allowed, but not required, to take History of European Law, Conflict of Private Law, Law of Municipal Corporations, and the Law of Taxation.

SCHOOL OF ARTS

The following departments are represented in the Faculty :

ASTRONOMY	GREEK
BIOLOGY	HEBREW
BOTANY	HISTORY
CHEMISTRY	LATIN
ENGLISH	MATHEMATICS
ENGLISH LANGUAGE AND LITERATURE	MECHANICS
LITERATURE	PHILOSOPHY, ETHICS, AND PSYCHOLOGY
RHETORIC AND EN- GLISH COMPOSITION	PHYSICS
GEOLOGY	POLITICAL ECONOMY
GERMANIC LANGUAGES AND LITERATURES	ROMANCE LANGUAGES AND LITERATURES

Officers of the Faculty

Ex-Officio Members of the University Council

HENRY DRISLER, LL.D.....	<i>Dean</i>
J. H. VAN AMRINGE, A.M., Ph.D., L.H.D.....	<i>Secretary</i>

Standing Committees

CURRICULUM AND SCHEME OF AT- TENDANCE	SPECIAL EXAMINATIONS, DEBARRED AND DEFICIENT STUDENTS
Professor Drisler, <i>chairman</i>	Professor Van Amringe, <i>chairman</i>
“ Van Amringe	“ Jackson
“ Mayo-Smith	“ Dunning
“ Butler	SPECIAL STUDENTS
“ Woodberry	Professor Mayo-Smith, <i>chairman</i>
ENTRANCE EXAMINATIONS	“ Boyesen
Professor Merriam, <i>chairman</i>	“ Britton
“ Goodwin	CHANGES IN ELECTIVE STUDIES
“ Peck	Professor Cohn, <i>chairman</i>
“ W. H. Carpenter	“ Perry
“ Cohn	“ Kemp
“ G. R. Carpenter	FREE AND REDUCED TUITION
ADMISSION TO ADVANCED STANDING	Professor Drisler, <i>chairman</i>
Professor Price, <i>chairman</i>	“ Price
“ Rood	“ Rees
“ Merriam	HONORS
“ Dunning	Professor Peck, <i>chairman</i>
“ Osborn	“ Hallock
	“ Woodward

Faculty

SETH LOW, LL.D., *President*

Professors

HENRY DRISLER, LL.D., *Jay Professor of the Greek Language and Literature*

J. HOWARD VAN AMRINGE, A.M., Ph.D., L.H.D., *Professor of Mathematics*

OGDEN N. ROOD, A.M., *Professor of Physics*

JOHN W. BURGESS, A.M., Ph.D., LL.D., *Professor of History, Political Science, and Constitutional Law*

CHARLES F. CHANDLER, Ph.D., M.D., LL.D., *Professor of Chemistry*

RICHMOND MAYO-SMITH, Ph.D., *Professor of Political Economy and Social Science*

AUGUSTUS C. MERRIAM, A.M., Ph.D., *Professor of Greek Archaeology and Epigraphy*

THOMAS R. PRICE, M.A., LL.D., *Professor of English Language and Literature*

HJALMAR H. BOYESEN, Ph.D., *Professor of the Germanic Languages and Literatures*

JOHN KROM REES, A.M., E.M., *Professor of Astronomy*

* JOHN D. QUACKENBOS, A.M., M.D., *Professor of Rhetoric*

JASPER T. GOODWIN, A.M., LL.B., *Adjunct Professor of Mathematics*

H. T. PECK, Ph.D., L.H.D., *Professor of the Latin Language and Literature*

NICHOLAS MURRAY BUTLER, Ph.D., *Professor of Philosophy, Ethics, and Psychology ; Lecturer on the History and Institutes of Education*

* WILLIAM H. CARPENTER, Ph.D., *Adjunct Professor of the Germanic Languages and Literatures*

ADOLPHE COHN, LL.B., A.M., *Professor of the Romance Languages and Literatures*

GEORGE EDWARD WOODBERRY, A.B., *Professor of Literature*

EDWARD DELAVAN PERRY, Ph.D., *Professor of Sanskrit*

A. V. WILLIAMS JACKSON, A.M., L.H.D., Ph.D., *Adjunct Professor of English, and Instructor in the Iranian Languages*

NATHANIEL L. BRITTON, E.M., Ph.D., *Professor of Botany*

WILLIAM A. DUNNING, Ph.D., *Adjunct Professor of History*

HENRY F. OSBORN, D.Sc., *DaCosta Professor of Biology*

JAMES F. KEMP, A.B., E.M., *Professor of Geology*

MICHAEL I. PUPIN, Ph.D., *Adjunct Professor of Mechanics*

R. S. WOODWARD, C.E., *Professor of Mechanics*

HENRY A. TODD, Ph.D., *Professor of Romance Philology*

GEORGE R. CARPENTER, A.B., *Professor of Rhetoric and English Composition*

Note: For details as to other officers of instruction see departmental statements

* Absent on leave.

Rules and Regulations for the Government of Students

From the Revised Statutes, Adopted June 6, 1892.

1 (a) There shall be four classes of students, to be designated respectively as the Freshman class, the Sophomore class, the Junior class, and the Senior class. The course of study of each of these classes shall occupy a year, and the entire course four years. C. viii., section 4.

(b) Every student who shall have completed the entire course of four years, and shall have passed satisfactorily all the examinations required of him, shall be qualified to receive the degree of Bachelor of Arts. C. viii., section 5.

(c) No student shall be admitted to the Freshman class at its formation unless he shall have attained the age of fifteen years, nor to a more advanced standing without a corresponding increase of age; but this rule may be dispensed with when, in the opinion of the Dean, there are sufficient reasons to justify its relaxation. C. viii., section 2.

(d) Every candidate for admission shall be required to present, before examination, a certificate of good moral character from his last teacher, or from some citizen in good standing; and students from other colleges shall be required to bring certificates from such colleges of honorable discharge. C. viii., section 3.

Entrance Examination

2 The entrance examination is designed to test the ability of the candidate to undertake the course of study, and not merely to ascertain the character and amount of his acquired knowledge.

3 Each applicant for admission to the Freshman class must file with the Dean of the School of Arts, at least one week before the day fixed for the entrance examinations, a certificate from his principal instructor containing a definite statement of the subjects which he is qualified to offer for examination and the certificate as to his moral character which is required by the college statutes (1 d). No student will be examined in June, 1894, whose name is not enrolled and whose certificate is not filed on or before May 28, 1894; nor will any student be examined in September, 1894, whose name is not enrolled and whose certificate is not filed on or before September 17, 1894. Blank forms of the certificate required can be had upon application to the registrar of the School of Arts. In the case of students expecting to be examined at a distance from the college, the names must be enrolled and the certificates filed one week earlier.

4 Entrance examinations will be held at the college on Monday and the days following of the week next preceding the annual commencement in June, and on the second Wednesday preceding the first Monday in October and upon so many of the days following as may be necessary. In 1894 the examinations will begin on June 4 and September 19; in 1895, on June 3 and September 18

5 Applicants for admission to the Freshman class are required to pass a satisfactory examination in the following seventeen subjects :

English

- 1 Grammar—(Whitney's Essentials of English Grammar indicates the field to be covered).
- 2 Composition—The candidate will be required to write an essay of at least two hundred and fifty words, based upon some subject taken from one of the four works in English literature prescribed for the year. The essay must be written during the examination, and will be judged with reference to spelling, punctuation, grammar, division by paragraphs, and expression.

For 1894, the works prescribed are :

Shakspere's Merchant of Venice, Scott's Lady of the Lake, The Sir Roger de Coverley Papers in the Spectator, and Irving's Sketch-Book.

For 1895, the works prescribed are :

Shakspere's Twelfth Night, Milton's L'Allegro and Il Penseroso, Longfellow's Evangeline, and Macaulay's Essays on Milton and Addison.

For 1896, the works prescribed are :

Shakspere's Merchant of Venice, Milton's L'Allegro and Il Penseroso, Longfellow's Evangeline, Macaulay's Essay on Milton, and Webster's first Bunker Hill Oration.

Latin

- 3 Five books of Cæsar's Commentaries on the Gallic War.
- 4 Six orations of Cicero ; reading at sight a short passage of easy Latin prose.
- 5 The first six books of Vergil's Æneid.
- 6 Prosody.
- 7 Grammar and prose composition. (As to the latter, Daniell's Exercises in Latin Prose Composition, both parts, indicates the field to be covered.)

Greek

- 8 Xenophon's Anabasis, Books 1 and 2.
- 9 Xenophon's Anabasis, Books 3 and 4 ; reading at sight a short passage of easy Greek prose.
- 10 Three books of Homer's Iliad, with prosody.
- 11 Grammar and prose composition. (As to the latter, Jones's Exercises in Greek Prose Composition indicates the field to be covered.)

Ancient History and Geography

- 12 The ancient history of Greece and Rome (the treatment of this subject in Myers's Ancient History indicates the field to be covered), including the historical geography of these countries.

Mathematics

- 13 Arithmetic, including the metric system of weights and measures.
 14 Algebra, to quadratic equations, including radicals and the binomial theorem.
 15 Plane geometry.

French or German

- 16a The ability to read easy French, such as Rambaud's *Histoire de la Civilisation Française*, and
 17a The elements of French grammar ; or
 16b The ability to read easy German, such as Andersen's or Grimm's *Märchen*, and
 17b The elements of German grammar.

6 The results of an entrance examination, entire or partial, will not be allowed to stand to the credit of a candidate for a longer period than sixteen months.

7 The Committee of the Faculty on Entrance Examinations will decide, and report to the Dean, within twelve days after the conclusion of the examination, which candidates have been admitted, which have been admitted conditionally, and which have been rejected.

8 Students admitted conditionally to the Freshman Class at the beginning of the academic year shall be held under probation till the end of the first term ; they shall then be dropped from the roll of the College if they have not made satisfactory progress in all their studies. No student shall be promoted to the Sophomore Class until he has satisfied all his entrance conditions.

9 The Committee of the Faculty on Entrance Examinations have jurisdiction over all questions arising under the rules relating to those examinations.

Preliminary Examination

10 An applicant duly enrolled, who has filed the required certificate from his principal teacher, may, at the time appointed for the examination in May or June of the year preceding his admission into the Freshman Class, but not in September or October, be examined on certain portions of the foregoing subjects. Such an applicant may offer at the preliminary examination the following :

Latin : Subject 3 and, if desired, either 4 or 5.¹

Greek : Subject 8 and, if desired, 9.¹

¹ At the preliminary examination the candidate will be tested, but not passed, in Latin and Greek grammar.

Mathematics : Subject 13, and if desired, 14.

11 After such preliminary examination, applicants will not be allowed to finish their examination on the requirements for admission until the entrance examination of the following year, without the written approval of the Dean of the School of Arts to be obtained during the month of June.

Admission of Special Students

12 Candidates for admission as special students, to pursue either a partial or irregular course, will make application to the Committee of the Faculty on Special Students.

Admission to Advanced Standing

13 Candidates for admission from other colleges, and those desiring to be admitted to advanced standing on examination, will make application to the Committee of the Faculty on Admission of Students from Other Colleges ; but after October 15 no student will be admitted to the Senior class as a candidate for a degree at the following commencement.

Examinations

14 Two examinations of all the classes are held every year, one commencing on the last Monday in January, and the other on the Monday of the third week preceding commencement. The former is called the mid-year examination ; the latter, the final examination. It is the privilege of any department to announce that in some or all of its courses the result of the mid-year examination will be tentative only, the grade given after the final examination applying to the whole year.

15 Any student who shall have been absent for more than ten per cent. of the exercises in any course during a single term, shall not be entitled to examination in that course.

16 No student will be granted a leave of absence at any time. Necessary absences must be reported to the Dean. Every student is expected and required to keep an account of his absences, and should he exceed the limit allowed in any course, he must present to the Dean, for submission to the Committee on Special Examinations, Debarred and Deficient Students, during the week preceding the stated examination, satisfactory explanation of all his absences, or be debarred from the examination.

17 A student absent from or found deficient (20) at a mid-year or final examination in any course, or a student debarred from any examination in accordance with the provisions of 15, who fails to make good his deficiency at the special examination held during the week preceding the opening of the college in October, will be dropped from the roll of his class. He will not be permitted to attend any of the exercises of the said class without the consent of the Committee on Special Examinations, Debarred and Deficient Students ; but he may enter the succeeding class and pursue the course or courses in which his

deficiency exists, and present himself for examination on such course or courses with that class. Upon failing a third time in any course his name will be dropped from the roll of the college. No student dropped from the roll of his class or of the college under the provisions of this section, will be accepted as a special student.

18 Examinations to enable deficient or debarred students to make good their deficiencies, are held during the week immediately preceding the opening of the college in October ; and, for members of the Senior class only, during the first week in May.

Proficiency and Deficiency

19 At the close of every term, and after the stated examination has been held, each officer of instruction will report to the Dean a list of all the students in his several courses, classifying them in five grades, namely, A, B, C, D, E, according as their work in the course has been excellent, good, fair, poor, or a failure. Each student's record, up to his Senior year, will be transmitted to his parent or guardian by the Dean at the close of each term.

20 Students reported in grade E in any course shall be deemed deficient in that course, and required to pass another examination in it at the time fixed for the special examination for debarred and deficient students, unless the Committee on Special Examinations, Debarred and Deficient Students shall otherwise direct (see **17** and **18**).

21 Students reported in grade D in any course shall be warned by the instructor in charge thereof that their work is so unsatisfactory that, unless improved, it may result in their being found deficient at the close of the next term.

22 Students reported in grade D in two or more courses shall be warned by the Dean that their record is not satisfactory, and that, unless improved, it may be found necessary to require them to take the courses a second time or to substitute other courses.

23 A student reported in grade D in four or more courses at the close of the year, and not reported in grade A or B in any course, will not be permitted to go on with his class without the consent of the Committee on Special Examinations, Debarred and Deficient Students, nor will he be accepted as a special student ; but he may enter the next succeeding class.

24 No scholarship, prize, or other honor shall be awarded in any course or department to any student who is reported in a grade below C in any other course or department.

Honors

25 Honors are awarded at the end of the second year, the end of the third year, and at the end of the course, and are known respectively as Sophomore Honors, Junior Honors, and Final Honors.

Sophomore Honors are awarded in classics, modern languages, English, and mathematics.

Junior Honors are awarded in classics, modern languages, English, mathematics, physics and chemistry.

Final Honors are awarded in classics, modern languages, English, mathematics, physics and chemistry, biology and botany, political science, and philosophy.

26 Each candidate for Honors must give notice of the fact to the Dean not later than the beginning of the second term of the year in which he presents himself for examination. Substitutes for the courses specified below for Honors may be allowed by the Faculty on petition, when good cause is shown.

Sophomore Honors

27 (a) **CLASSICS**—Candidates for Sophomore Honors in classics, must have taken Greek A and B and Latin A and B (see 42), and must not have been classed below grade B in any of them. In addition they will be examined in reading Latin and Greek at sight, in Latin and Greek prose composition, and in some special subject connected with the Greek or Latin languages or literatures, the same to be announced on or before November 1 of each year.

(b) **MODERN LANGUAGES**—Candidates for Sophomore Honors in modern languages must have taken at least two courses in German, chosen from A, B, I, and II, and at least two courses in the Romance Languages, from French A, B, I, and II, Italian I and II, and Spanish I and II (see 42); and must not have been classed below grade B in any of them. They will also be examined in reading French and German at sight, in French and German conversation, and in some special subject connected with either the French or German language or literature, the same to be announced on or before November 1 of each year.

(c) **ENGLISH**—Candidates for Sophomore Honors in English must not have been classed below grade B in Rhetoric A and B and English A (see 42). They will also be required to pass an examination upon such additional work as may be agreed upon from year to year by the Professor of Rhetoric, the Professor of Literature, and the Professor of the English Language and Literature, the same to be announced on or before November 1 of each year.

(d) **MATHEMATICS**—Candidates for Sophomore Honors in mathematics must not have been classed below grade B in Mathematics A and B (see 42); and will also be required to pass an examination on such additional work as may be announced by the Professor of Mathematics on or before November 1 of each year.

Junior Honors

28 Candidates for Junior Honors in classics, modern languages, English, or mathematics, respectively, must either have gained Sophomore Honors in the same subject; or have taken the courses and received the grade necessary to qualify them to compete for Sophomore Honors therein; or have been reported in grade A in all of the courses taken during Junior year in the department in which application for Honors is made.

29 (a) CLASSICS—Candidates for Junior Honors must have complied with the provisions of **28**, and also have taken courses in the departments of Greek and Latin amounting to at least four hours a week in each, and must not have been classed below grade B in any of them. They will also be required to pass an examination on such additional matter as may be agreed upon by the Professors of Greek and Latin, and announced on or before November 1 of each year.

(b) MODERN LANGUAGES—Candidates for Junior Honors must have complied with the provisions of **28**, and also have taken those additional courses in the Germanic and Romance Languages, and must not have been classed below grade B in any of them. They will also be required to pass an examination on some special subject agreed upon by the Professors of the Germanic Languages and the Romance Languages, and announced on or before November 1 of each year.

(c) ENGLISH—Candidates for Junior Honors must have complied with the provisions of **28**, and also must have taken Rhetoric C and courses amounting to at least six hours a week from among those offered to Juniors by the departments of Rhetoric, Literature, and English Language and Literature; and they must not have been classed below grade B in any of them. They will also be required to pass a special examination on some subject agreed upon by the Professors of Rhetoric, Literature, and English Language and Literature, and announced on or before November 1 of each year.

(d) MATHEMATICS—Candidates for Junior Honors must have complied with the provisions of **28**, and also have taken Mathematics I and II and Mechanics I, and not have been classed below grade B in any of them. They will also be required to pass a special examination on some subject agreed upon by the Professors of Mathematics and Mechanics, and announced on or before November 1 of each year.

(e) PHYSICS AND CHEMISTRY—Candidates for Junior Honors must have taken Chemistry I (unless taken in Sophomore year, in which case Chemistry III must be substituted) and Physics I, and must not have been classed below grade B in any of them. They will also be required to pass a special examination in some subject agreed upon by the Professors of Physics and Chemistry, and announced on or before November 1 of each year.

Final Honors

30 Candidates for Final Honors in classics, modern languages, English, mathematics, and physics and chemistry, respectively, must either have gained Junior Honors in the same subject; or have taken the courses and received the grade necessary to qualify them to compete for Junior Honors therein; or have been reported in grade A in all of the courses taken during Senior year in the department in which application for Honors is made.

31 (a) CLASSICS—Candidates for Final Honors must have complied with the provisions of **30** and also have taken additional courses in the departments of Greek and Latin amounting to at least four hours a week in each, and must not have been classed below grade B in any of them. They will also be re-

quired to submit, on or before May 1, an essay containing not less than 5000 words on some subject agreed upon by the Professors of Greek and Latin, and announced on or before November 1 preceding.

(b) MODERN LANGUAGES—Candidates for Final Honors must have complied with the provisions of 30, and also have taken three additional courses in the Germanic and Romance Languages, and must not have been classed below grade B in any of them. They will also be required to submit, on or before May 1, an essay containing not less than 5000 words on some subject agreed upon by the Professors of Germanic Languages and Romance Languages, and announced on or before November 1 preceding.

(c) ENGLISH—Candidates for Final Honors must have complied with the provisions of 30, and also have taken courses amounting to at least ten hours a week from among those offered to Seniors by the departments of Rhetoric, Literature, and English Language and Literature; and must not have been classed below grade B in any of them. They will also be required to submit, on or before May 1, an essay containing not less than 5000 words on some subject agreed upon by the Professors of Rhetoric, Literature, and English Language and Literature, and announced on or before November 1 preceding.

(d) MATHEMATICS—Candidates for Final Honors must have complied with the provisions of 30, and also have taken at least two courses from among those offered to Seniors by the department of Mathematics, and at least one from among those offered by the department of Astronomy; and must not have been classed below grade B in any of them. They will also be required to submit, on or before May 1, a satisfactory essay on some subject agreed upon by the Professors of Mathematics and Astronomy, and announced on or before November 1 preceding.

(e) PHYSICS AND CHEMISTRY—Candidates for Final Honors must have complied with the provisions of 30, and also have taken at least two additional courses in Physics and at least two in Chemistry, including laboratory work in both subjects; and must not have been classed below grade B in any of them. They will also be required to submit, on or before May 1, a satisfactory essay on some subject agreed upon by the Professors of Physics and Chemistry, and announced on or before November 1 preceding.

(f) BIOLOGY AND BOTANY—Candidates for Final Honors must have taken at least one course in Chemistry, one in Botany, and three in Biology, including laboratory work in all of the subjects; and must not have been classed below grade B in any of them. They will also be required to submit, on or before May 1, a satisfactory essay on some subject agreed upon by the Professors of Biology and Botany, and announced on or before November 1 preceding.

(g) POLITICAL SCIENCE—Candidates for Final Honors must not have been classed below grade B in History A and B and Political Economy A. They must also have taken at least three courses from among those offered to Seniors by the departments of History and Political Economy; and must not have been classed below grade B in any of them. They will also be required to submit, on or before May 1, an essay containing not less than 5000 words on

some subject agreed upon by the Professors of History and Political Economy, and announced on or before November 1 preceding.

(h) **PHILOSOPHY**—Candidates for Final Honors must not have been classed below grade B in Philosophy A, and must have taken at least three courses from among those offered to seniors by the departments of Philosophy, Ethics, and Psychology; and must not have been classed below grade B in any of them. They will also be required to submit, on or before May 1, an essay containing not less than 5000 words on some subject agreed upon by the Professors of Philosophy, Ethics, and Psychology, and announced on or before November 1 preceding.

Graduation Thesis

32 Each candidate for graduation shall, after consultation with the instructor in charge of one of the courses in which he has studied or is studying, select for a thesis, or essay, some subject connected with the course, and, by December of the year preceding his graduation, shall submit the title of such thesis, or essay, for the President's approval. If the title be approved, the student shall write and submit to the President, by March 15, a thesis or essay of his own composition, which shall be judged by the head of the department in which the subject of discussion lies, primarily with regard to its substance; but no such thesis or essay will be accepted that is notably deficient in English composition. Each essay shall contain as appendix a list of all authorities that have been consulted. A student who fails to comply with the requirement of this rule, or whose essay is not accepted by the examiner, will not be recommended to the Trustees for graduation. No thesis will be accepted which contains less than 2000 words. The graduating theses are retained by the College.

COURSE OF STUDY

This statement comprises all courses open to students in the School of Arts. These courses are to be pursued in accordance with the following regulations:

33 Freshmen are required to take Greek A, Latin A, Rhetoric A, Mathematics A, and either French A or German A. A Freshman, who, on entrance, is able to pass in both French A and German A, may substitute French B or German B; or, if able to pass in both French B and German B, he may substitute an elective course in French, German, Italian, or Spanish, on the recommendation of the head of the department.

34 Sophomores are required to take Greek B, Latin B, Rhetoric B, English A, Mathematics B, History A, and Course B of the modern language which was taken in the Freshman year. A Sophomore who is able to pass in both French B and German B may substitute an elective course in French, German, Italian, or Spanish, on the recommendation of the head of the department. A Sophomore may also substitute Chemistry I for any prescribed language, ancient or modern, except English.

35 Juniors are required¹ to take Rhetoric C, Philosophy A, History B, Political Economy A, and eleven hours of elective courses. They are permitted to take in addition other courses designated as optional. They may elect any unstarred course, subject to the restrictions stated below, but *no starred course*, except with the previous consent of the head of the department.

36 Seniors are required to take fifteen hours of elective courses. They may elect any course, starred or unstarred, subject to the restrictions stated below, except Italian I and Spanish I. Their attention is directed to the fact, that the first-year courses of the School of Law, the School of Mines, and the College of Physicians and Surgeons are open to them, and that, consequently, such students as may desire to do so can prepare themselves for advanced standing in those schools by electing these first-year courses as a whole or in part, and counting them for the degree of A.B. Courses given at the College of Physicians and Surgeons are so designated. A Senior cannot elect any course given in the other schools in the hour preceding or succeeding a course taken by him at the College of Physicians and Surgeons.

37 Special students may take any course, prescribed or elective, on the approval in writing of the Committee of the Faculty on Special Students, to which they must apply for admission.

38 The following regulations are obligatory upon all students :

- (a) No prescribed course can be taken as an elective.
- (b) No optional course can be taken except by permission of the Dean, nor can be counted for a degree under any circumstances.
- (c) Every student must have taken one course in natural science including laboratory work before graduation.
- (d) Courses in laboratory work or in drawing can be counted for only one half the number of hours actually occupied.
- (e) No student can take more than four hours (except in laboratory work or in drawing) assigned to the same day, except by permission of the Dean.
- (f) No student can take more than six hours in any one department except by permission of the Dean.
- (g) All elective courses are taken subject to the conditions imposed by the head of the department.
- (h) Any student may be excluded from an elective course on the report of the instructor to the Dean, that this is advisable ; and the student shall then be required to elect some other equivalent course.

39 No changes in elective courses can be made after September 27, except by permission of the Committee of the Faculty on Changes in Elective Courses, to which application must be made in writing with a statement of reasons.

40 Students are required to give notice to the Dean of their choice of elective courses, upon blanks provided at the Dean's office, on or before September 1. They must avoid conflicts of courses at the same hour, and for that purpose should consult the hour-scheme issued herewith (see pp. 138-139). This choice is regarded as preliminary, and may be altered at the student's will

¹ NOTE.—The hour 1.30 to 2.30 is reserved for the obligatory courses.

until September 27, but after that date no change will be permitted except by permission of the Committee of the Faculty on Changes in Elective Courses. Students are advised to make their choice upon a settled plan, consistent with their aims in education, and especially to consult with their instructors in the courses chosen.

41 Students are expected to attend upon the Wednesday preceding the first Monday in October, which in 1894 falls on Wednesday, September 26, for registration and the payment of matriculation fees. Failure on the part of any student to present himself at the first hour of any elective course may be regarded as sufficient reason to exclude him therefrom; and every student who is late in entering his elective courses will be charged with absences equal in number with the hours missed.

COURSES OF INSTRUCTION.¹

42 Prescribed courses are designated by Roman capitals; elective courses by Roman numerals. Elective courses intended for both Juniors and Seniors are unstarred; those intended exclusively for Seniors are starred. For more detailed information in regard to topics, text-books, or methods in any particular course, students are referred to the departmental statements.

Architecture

- * I HISTORY OF ANCIENT ORNAMENT. Professor HAMLIN
M. at 9.30
- * II HISTORY OF RENAISSANCE AND MODERN ORNAMENT. Professor HAMLIN
Tu. at 11.30
- * III ANCIENT ARCHITECTURAL HISTORY. Mr. KRESS
Th. 9.30 to 11.30
- * IV PROJECTIONS, SHADES AND SHADOWS, AND ELEMENTS OF ARCHITECTURE. Professor SHERMAN
M. at 12.30, W. at 10.30, and F. at 11.30
- * V HISTORICAL DRAWING. Mr. KRESS
Tu. at 10.30
- * VI ARCHITECTURAL DRAWING. Mr. HARRIMAN
M. and Th. 2.30 to 5.30
- * VII FREE-HAND DRAWING. Professor HAMLIN
Tu. and W. 2.30 to 4.30
- * VIII DESIGN FROM DICTATION. Professor WARE
Tu., Th., and F. 2.30 to 4.30

¹ Subject to revision in details in case of need.

* IX DRAWING. MR. MAYER

Th. at 11.30 (First term),
 DESCRIPTIVE GEOMETRY. MR. WOOLSON
 W. and Th. at 11.30 (Second term)

Courses V, VI, VII, and VIII count for one half the number of hours actually occupied

Astronomy

I LECTURES—Conferences at the observatory. Professor REES

M. and Tu. at 11.30

* II PRACTICAL ASTRONOMY AND NAVIGATION. Professors REES and Mr. MONELL

Tu. at 12.30 and Th. at 11.30

* III GEODESY—Professor REES and Mr. JACOBY

Th. at 9.30 and F. at 12.30.

Biology

(Instruction given in the College of Physicians and Surgeons)

II ELEMENTARY BIOLOGY—Lectures and laboratory work. Professor OSBORN

Th. and F. 3 to 5

* III GENERAL ZOOLOGY—Lectures and laboratory work. Professor OSBORN

M. and Tu. 2.30 to 4.30

* V COMPARATIVE NEUROLOGY.

W. from 2.30 to 5.30

Course V is recommended to Seniors studying physiological psychology. See also Physiology.

Botany

I—ELEMENTARY BOTANY, Major Course. Professor BRITTON and Mr. CURTISS

F. at 11.30

Course I requires four hours of laboratory work, and counts as a three-hour course

II—ELEMENTARY BOTANY, Minor Course. Professor BRITTON and Mr. CURTISS

F. at 11.30

Course II requires two hours of laboratory work, and counts as a two-hour course.

* III—GENERAL BOTANY. Professor BRITTON

M. at 10.30

* IV—VEGETABLE ANATOMY. Mr. CURTISS

Tu. at 2.30 to 4.30

* V—MORPHOLOGY AND DETERMINATION OF THE FLOWERING PLANTS. Professor BRITTON

M., W., and F. at 3.30

* VI—ECONOMIC BOTANY—Illustrated lecture course on drug-plants, food-plants, fibre-plants, and timbers. Professor BRITTON

Th. at 12.30

Chemistry

I—INORGANIC CHEMISTRY. Professor CHANDLER

M. and F. at 12.30

Course I requires two hours of laboratory work, and counts as a three-hour course. It may be substituted by Sophomores for any prescribed language except English; it may be taken by Seniors and Juniors who have not taken it previously.

II—APPLIED CHEMISTRY. Professor CHANDLER

M., Tu., and F. at 9.30

* III—QUALITATIVE ANALYSIS—Lectures: M. and Th. at 12.30. Recitations: (Div. I), Tu. at 10.30 and F. at 12.30. (Div. II), Tu. and Th. at 11.30. Drs. WELLS and CUSHMAN

Course III requires four hours of lecture and recitation and four hours of laboratory work; for the latter the class is taken in two divisions. It counts as a six-hour course.

Courses given at the College of Physicians and Surgeons

* I—PHYSIOLOGY. Professor CURTIS

Tu., W., and Th. at 10

* II—ANATOMY—Lectures and demonstrations. Professor HUNTINGTON

Tu., W., and Th. at 11, and M. at 12

* III—NORMAL HISTOLOGY. Dr. FREEBORN

Tu., W., Th., and F. 1 to 3. (First or second term)

* IV—PHYSIOLOGICAL AND MEDICAL CHEMISTRY. Mr. PELLEW

First term, Lectures M. and Th. at 12; or Second term, Lectures Tu. and F. at 12. Laboratory practice (either term) Tu. and Th. 2 to 4, or W. and F. 2 to 4

* V—PHYSICS AND CHEMISTRY. Professor CHANDLER

M., Tu., W., and Th. at 5

English

A—EIGHTEENTH-CENTURY LITERATURE—Lectures—2 hours. Professor WOODBERRY

Course A is prescribed for Sophomores.

I—LAWS OF PROSE COMPOSITION IN MODERN ENGLISH. Professor PRICE

M. and W. at 11.30

II—SHAKSPERE—Language, versification, and method of dramatic poetry. Professor PRICE

W. at 10.30 and F. at 11.30

* III—CHAUCER—Language, versification, and method of narrative poetry. Professor PRICE

Tu. at 12.30 and F. at 10.30

*V—THE POETRY OF TENNYSON, BROWNING, AND MATTHEW ARNOLD.
Professor PRICE

M. and Th. at 12.30

VI—ANGLO-SAXON LANGUAGE AND ENGLISH HISTORICAL GRAMMAR.
Professor JACKSON

Tu. and Th. at 11.30

*VII—ANGLO-SAXON POETRY. Professor JACKSON

W. and F. at 11.30. (First term)

*VIII—EARLY AND MIDDLE ENGLISH FROM THE TWELFTH TO THE
FIFTEENTH CENTURY. Professor JACKSON

W. and F. at 11.30. (Second term)

IX—ENGLISH DRAMA TO THE CLOSING OF THE THEATRES (1640), exclu-
sive of Shakspeare. Professors JACKSON and WOODBERRY

Tu. and Th. at 12.30

This course will not be given in 1893-4.

X—SPENSER AND THE ELIZABETHAN POETS, exclusive of Drama. Professor
WOODBERRY

F. at 10.30. (First term)

XI—MILTON AND THE CAROLINE POETS. Professor WOODBERRY

F. at 10.30. (Second term)

XII—NINETEENTH-CENTURY LITERATURE. Professor WOODBERRY

W. and F. at 11.30

*XIII—AMERICAN LITERATURE. Professor BRANDER MATTHEWS

Tu. and Th. at 1.30

*XIV—THE ART OF ENGLISH VERSIFICATION. Professor BRANDER
MATTHEWS

W. at 2.30

For additional courses, see Literature and Rhetoric.

French, see Romance Languages.

Geology

I—GENERAL GEOLOGY—2 hours a week. Mr. HOLLICK

W. and Th. at 2.30

*II—GENERAL GEOLOGY. Professor KEMP

Tu., W., and Th. at 12.30

*III—ECONOMIC GEOLOGY. Professor KEMP

W., Th., and F. at 10.30

Requires Course I or an equivalent.

Germanic Languages

A—GERMAN—Whitney's Grammar ; Buchheim's Heine's Prosa ; Riehl's Kulturgeschichtliche Novellen—3 hours a week. Mr. BABBITT

Course A is prescribed for Freshmen who do not take French A or its equivalent.

B—GERMAN—Goethe, Schiller, and Lessing—3 hours a week. Professor BOYESEN

Course B is prescribed for Sophomores who have taken Course A in their Freshman year, unless Chemistry I is substituted in its place.

I—GOETHE'S FAUST—First and second parts, with commentary. Professor BOYESEN

W. and F. at 9.30

II—HISTORY OF GERMAN LITERATURE—Lectures. Professor BOYESEN
M. at 9.30 and Tu. at 2.30.

III—SELECTED HISTORICAL PROSE, chiefly from Freytag's Bilder aus der Deutschen Vergangenheit—Reading at sight. Mr. BABBITT

M. at 2.30 and W. at 3.30

IV—HISTORY OF THE GERMAN LANGUAGE—Lectures. Professor CARPENTER
M. and W. at 2.30.

* V—ICELANDIC, Elementary Course. Sweet, Icelandic Primer ; Vigfusson and Powell, Icelandic Prose Reader. Professor CARPENTER

M. and W. at 12.30

* VI—GOTHIC—Wright, Primer of the Gothic Language ; Braune, Gothic Grammar ; Bernhardt, Die Gothische Bibel. Professor CARPENTER

Tu. and Th. at 12.30

VII—MIDDLE HIGH GERMAN—Wright, Middle High German Primer ; Paul, Mittelhochdeutsche Grammatik ; Weinhold, Mittelhochdeutsches Lesebuch. Professor CARPENTER

M. and W. at 3.30

* VIII—OLD HIGH GERMAN—Wright, Old High German Primer ; Braune, Althochdeutsche Grammatik, Althochdeutsches Lesebuch. Professor CARPENTER

Tu. and Th. at 3.30

* IX—GERMANIC MYTHOLOGY—Lectures, Th. at 2.30. (Second term only). Professor CARPENTER

* X—HISTORY OF DANISH AND NORWEGIAN LITERATURE. Professor BOYESEN

W. at 2.30

Greek

A—HOMER (ODYSSEY, BOOKS 6-8)—LYSIAS (Selections) or ANDOCIDES—Greek composition—3 hours

Dr. YOUNG

Course A is prescribed for Freshmen.

B—EURIPIDES (MEDEA) AND PLATO (PROTAGORAS)—Greek composition and versification—3 hours. Professor PERRY

Course B is prescribed for Sophomores, unless Chemistry I is substituted in its place.

Additional instruction will be given in both A and B at the desire of the student.

I—SOPHOCLES (AJAX, ANTIGONE) and THUCYDIDES. Professor PERRY
M., Tu., and Th. at 10.30

II—ÆSCHYLUS (PROMETHEUS, PERSÆ); ISOCRATES (Panegyricus). Dr. YOUNG

Tu. and F. at 11.30

III—LECTURES ON THE GREEK DRAMA. Professor MERRIAM
W. at 10.30

* IV—PINDAR, THEOCRITUS, ÆSCHYLUS, OR ARISTOPHANES (FROGS); DEMOSTHENES (de Corona), or ÆSCHINES. Professor MERRIAM
M. and W. at 11.30

* V—LECTURES ON THE ELEGIAC, IAMBIC, AND MELIC POETS. Professor MERRIAM
Th. at 11.30

* VI—NEW TESTAMENT—Epistles. Dr. YOUNG
M. at 9.30

* VII—NEW TESTAMENT—Gospels and Acts. Dr. YOUNG
W. at 12.30

IX—LECTURES ON GREEK ART. Professor MERRIAM
Tu. at 10.30

* X—THE TOPOGRAPHY, MYTHOLOGY, AND MONUMENTS OF ANCIENT GREECE, with Pausanias as Text. Professor MERRIAM
W. at 9.30

Hebrew, see Oriental Languages

History

A—MYERS'S MEDÆVAL AND MODERN HISTORY—2 hours. Mr. COLBY
Course A is prescribed for Sophomores.

B—EUROPEAN HISTORY SINCE 1815—2 hours, first term. Professor DUNNING

Course B is prescribed for Juniors

* I—CONSTITUTIONAL HISTORY OF EUROPE—(First term). Professor OSGOOD

M., Tu., W., and Th. at 1.30

* II—CONSTITUTIONAL HISTORY OF ENGLAND. Professor OSGOOD

Tu. and Th. at 3.30

* III—HISTORY OF POLITICAL THEORIES. Professor DUNNING

Tu., W., and F. at 10.30

* IV—MODERN FRENCH HISTORY. Professor COHN

Tu. at 2.30

* X—CONSTITUTIONAL HISTORY OF THE UNITED STATES—(Second term).
Professor BURGESS

M., Tu., W., and Th. at 10.30

Iranian, see Oriental Languages

Italian, see Romance Languages

Language

GENERAL INTRODUCTION TO THE STUDY OF LANGUAGE. Professor JACKSON

M. and W. at 10.30

Latin

A—PLINY'S LETTERS (SELECTIONS)—HORACE (Odes, Epodes, Carmen Sæculare)—Review of Prosody, with the scanning of Horace—Latin prose composition—Reading at sight—3 hours a week. Professor PECK and Mr. COOPER

Course A is prescribed for Freshmen.

B—TACITUS (Agricola and Germania)—HORACE (Satires and Epistles)—Latin prose composition—Critical study of prosody—Reading at sight—Lectures on the Roman historians—3 hours a week. Dr. MCCREA

Course B is prescribed for Sophomores, unless Chemistry I is substituted in its place.

I—JUVENAL (Satires)—(First term). Dr. EGBERT

M. at 11.30 and F. at 10.30

II—TERENCE (Andria and Phormio). Dr. EGBERT

Tu. and Th. at 11.30. (First term)

III—CICERO (de Officiis)—Lectures on Roman philosophy. Dr. EGBERT

M. at 11.30 and F. at 10.30. (Second term)

IV—LUCRETII (de Rerum Natura : Book I), and the Epicurean philosophy.
Professor PECK

Tu. and Th. at 10.30

* VI—ROMAN HISTORY, THE REIGN OF TIBERIUS—(Tacitus, Suetonius, and Velleius Paterculus)—Reading and preparation of papers on the early Empire.

Dr. EGBERT

M. and W. at 1.30

* VII—PLAUTUS (Four Plays). Dr. MCCREA

Tu. and F. at 1.30

* VIII—LECTURES ON THE GREAT WRITERS OF ROMAN HISTORY (Polybius, Sallust, Livy, Tacitus, and Suetonius). Dr. EGBERT

W. at 12.30

* IX—PSEUDO-VERGILIAN POEMS (Ciris, Copa, Culex, Moretum, and Catalecta). Professor PECK

M. and F. at 12.30

Law

* I—LAW OF CONTRACTS. Professor KEENER

M., T., and W. at 10.30

* II—ELEMENTS OF JURISPRUDENCE—Equity. Professor KEENER

W. at 11.30

* III—LAW OF TORTS. Professor BURDICK

Th. and F. at 2.30

* IV—REAL AND PERSONAL PROPERTY. Professor KIRCHWEY

M., Tu., and W. at 2.30

* V—CRIMINAL LAW AND PROCEDURE. Professor MOORE

Th. and F. at 11.30

* VI—DOMESTIC RELATIONS. Professor CUMMING

M. and Tu. at 11.30 (October to February)

* VII—COMMON LAW PLEADING AND PROCEDURE. Mr. STARBUCK

W. and F. at 4.30 (February to June)

Literature

* I—THE HISTORY AND THEORY OF CRITICISM—Plato, Aristotle, Horace, Quintilian, Sidney, Boileau, Dryden, Lessing, Coleridge. Professor WOODBERRY

W. and F. at 12.30

* II—THE HISTORY OF MODERN FICTION. Professor BRANDER MATTHEWS

W. at 1.30

* III—THE EPOCHS OF THE DRAMA: Greek, Latin, Spanish, English, French, German. Professor BRANDER MATTHEWS

Tu. and Th. at 2.30

For additional courses by Professors Woodberry and Brander Matthews see English.

Mathematics

A—VOLUMETRIC AND SPHERICAL GEOMETRY (Davies' Legendre, Books 6-9)—Algebra from quadratics (Peck's)—3 hours. Professor GOODWIN

Course A is prescribed for Freshmen.

B—PLANE, ANALYTICAL, AND SPHERICAL TRIGONOMETRY AND MENSURATION (Davies' Legendre)—2 hours. Professor GOODWIN

Course B is prescribed for Sophomores.

I—ANALYTICAL GEOMETRY. Professor VAN AMRINGE
M., Tu., and W. at 10.30

II—DETERMINANTS AND MODERN GEOMETRY—MR. MACLAY
M. and W. at 9.30

* III—SOLID ANALYTICAL GEOMETRY—MR. MACLAY. Tu., W., and Th.
at 12.30

* IV—DIFFERENTIAL AND INTEGRAL CALCULUS—Professor VAN AMRINGE
W. at 11.30, Th. and F. at 10.30

* V—SURVEYING AND DESCRIPTIVE GEOMETRY—Professor GREENLEAF.
W. at 10.30 and (Div. I) Th. at 11.30 ; (Div. II) Th. at 9.30

Course V requires one hour of recitation and one hour practical work ; for the latter the class is taken in two divisions.

Mechanics

MECHANICS WITH EXPERIMENTS—Professor WOODWARD AND MR. PFISTER
Th. and F. at 11.30

Mineralogy

* I—BLOWPIPE ANALYSIS AND CRYSTALLOGRAPHY—Professor MOSES
Tu. and W. at 1.30

Oriental Languages*Sanskrit*

* I—ELEMENTARY COURSE—Professors PERRY and JACKSON
Tu. and F. at 9.30

* IV—INTRODUCTION TO THE STUDY OF PHONETICS—Professor PERRY
W. at 9.30 (Second term)

Semitic

I—BIBLICAL HEBREW, Elementary Course, Harper's Hebrew Method and Manual, and Elements of Hebrew. Professor GOTTHEIL
M. and W. at 4.30

* II—BIBLICAL HEBREW, Second Course—Critical Study of the Book of Job. Professor GOTTHEIL
M. and Th. at 3.30

* III—RABBINICAL HEBREW: interpretation of selected treatises of the Mishna. Professor GOTTHEIL.

Tu. 4.30 to 6

* IV—RABBINICAL HEBREW: mediæval Hebrew philosophy. Professor GOTTHEIL

W. 4.30 to 6

* VI—ASSYRIAN, FIRST COURSE: Abel und Winckler, Keilschrift-texte zum Gebrauch bei Vorlesungen. Professor GOTTHEIL

Tu. and Th. at 2.30

* VII—ARABIC, Elementary Course—Translation from English into Arabic. Professor GOTTHEIL

Tu., W., and F. at 3.30 (First term); Tu. at 3.30 (Second term)

* X—SYRIAC, Second Course: interpretation of Hoffmann's Julianos der Abtrünnige, or Cureton's Spicilegium Syriacum. Professor GOTTHEIL

Tu. and F. at 1.30

Iranian

* I—AVESTAN, Elementary Course—Professors JACKSON and PERRY

W. and F. at 12.30

* III—OLD PERSIAN INSCRIPTIONS—Professor JACKSON

Th. at 1.30. (First term)

* IV—PAHLAVI, Elementary Course—Professor JACKSON

Th. at 1.30. (Second term)

Philosophy

A—LOGIC AND PSYCHOLOGY—2 hours. Dr. HYSLOP

Course A is prescribed for Juniors.

* II—ETHICS, Introductory Course—Dr. HYSLOP

Tu. and Th. at 2.30

III—GENERAL HISTORY OF PHILOSOPHY—Professor BUTLER

M. and W. at 2.30

* VIII—CONTEMPORARY PSYCHOLOGISTS (Wundt, Volkman, Münsterberg, Ribot, James)—Lectures and reading. Professor BUTLER

F. at 4.30 (Second term)

* IX—PHYSIOLOGICAL PSYCHOLOGY—Dr. FARRAND

M., W., and F. at 10.30

* XIII—EXPERIMENTAL PSYCHOLOGY, Introductory Course — Professor CATTELL

F. from 11.30 to 1.30

Pedagogy

(Connected with the department of philosophy)

* II—SYSTEMATIC PEDAGOGICS—Principles of teaching. Professor BUTLER
Th. at 3.30

Physics

I—ELEMENTARY PHYSICS, Major Course—Professor ROOD
M. and Th. at 11.30

Course I requires six hours of laboratory work and counts as a five-hour course.

II—ELEMENTARY PHYSICS, Minor Course—Professor ROOD
M. and Th. at 11.30

Course II requires two hours of laboratory work and counts as a three-hour course.

* III—PHYSICS—Lectures on light and heat. Professor ROOD
M., W., and F. at 9.30

Course III allows either two or four hours of laboratory work, and counts as a four or five-hour course.

* IV—HIGHER PHYSICS—Professor HALLOCK
Tu. and Th. at 9.30 with 4 hours of laboratory work.

Course IV requires four hours of laboratory work, and counts as a four-hour course.

Physiology

* I—GENERAL PHYSIOLOGY—Lectures. 1 hour a week throughout the year.
Dr. LEE

M. at 1.30

See also courses given at College of Physicians and Surgeons.

Political Economy

A—ELEMENTARY COURSE—2 hours. (Second term) Professor MAYO-SMITH

Course A is prescribed for Juniors.

* I—HISTORICAL AND PRACTICAL POLITICAL ECONOMY—Professor MAYO-SMITH

M. and W. at 3.30 and F. at 1.30

Students in Course I may take a fourth hour (essays, statistical exercises, and reading). Professors MAYO-SMITH and SELIGMAN

F. 2.30 to 4

* IV—TAXATION AND FINANCE—Professor Seligman
Tu. and Th. at 4.30

* V—FINANCIAL HISTORY OF THE UNITED STATES—Professor SELIGMAN
Tu. and Th. at 3.30 (Second term only)

Rhetoric

A—RHETORIC AND ENGLISH COMPOSITION—Essays, lectures. 3 hours.
Professor CARPENTER, Mr. BALDWIN, and Mr. VAIL
Prescribed for Freshmen.

B—PRACTICE IN VARIOUS KINDS OF ENGLISH COMPOSITION.—Essays, lectures, and consultations. Professor CARPENTER and Mr. BALDWIN
Prescribed for Sophomores.

C—FOUR ESSAYS—Voluntary lectures, consultations. Professor CARPENTER and Mr. BALDWIN
Prescribed for Juniors.

I—ENGLISH COMPOSITION—Themes, essays, lectures, and consultations. 2 hours, first term. Professor CARPENTER
Open to properly qualified Juniors and Seniors. (Given in 1894-5.)

II—ENGLISH COMPOSITION, Advanced Course — Lectures and essays. 2 hours, second term. Professor CARPENTER
Open to properly qualified Juniors and Seniors. (Given in 1894-5.)

Romance Languages

French

A—FRESHMAN COURSE—Edgren's grammar; Grandgent's composition; French prose—3 hours a week. Mr. LOISEAUX
Course A is prescribed for Freshmen who do not take German A or its equivalent.

B—SOPHOMORE COURSE—General introduction to the study of French literature—Masterpieces of writers of the 17th, 18th, and 19th centuries—3 hours a week. Dr. WOODWARD

Course B is prescribed for Sophomores who have taken French A in the Freshman year; unless Chemistry I is substituted in its place.

NOTE.—Provision will be made for advanced students, who wish to begin French.

I—FRENCH RHETORIC. Professor COHN and Mr. LOISEAUX
M., W., and F. at 2.30

II—FRENCH LITERATURE IN THE 17TH CENTURY. Professor COHN
M., W., and F., at 9.30

* III—FRENCH LITERATURE IN THE 18TH CENTURY. Professor COHN
M., W., and F. at 1.30

* IV—VICTOR HUGO AND THE ROMANTIC MOVEMENT. Professor COHN
Tu. at 11.30

* VI—THE FRENCH DRAMATISTS OF THE 19TH CENTURY. Professor BRANDER MATTHEWS

This course will not be given 1893-4.

* VII—WRITERS OF THE 16TH CENTURY, ESPECIALLY MONTAIGNE. Mr. LOISEAUX

Th. at 1.30

* VIII—THE FRENCH CHRONICLERS OF THE MIDDLE AGES—Villehardouin, Joinville, Froissart, etc. Dr. WOODWARD

Tu. at 10.30

* XI—THE ELEMENTS OF ROMANCE PHILOLOGY. Professor COHN

Th. at 2.30

Italian

I—ELEMENTARY COURSE—Grandgent's grammar and composition ; modern Italian prose. Mr. SPERANZA

M., W., and F. at 2.30

Course I is open to Freshmen and Sophomores who have passed in the prescribed modern language courses ; it is also open to Juniors, and is optional in the Senior year.

II—COMPOSITION, PROSE AND POETRY OF THE 16TH CENTURY—Machiavelli, Ariosto, Tasso—Modern prose and poetry. Mr. SPERANZA

M., W., and F. at 9.30

III—COMPOSITION, PROSE AND POETRY OF THE 14TH CENTURY—Dino Compagni ; Boccaccio ; Franco Sacchetti ; Dante's Rime, and Vita Nuova—Modern prose and poetry. Mr. SPERANZA

M., W., and F. at 3.30

* IV—CRITICAL STUDY OF THE DIVINA COMMEDIA OF DANTE. Mr. SPERANZA

Tu. and Th. at 9.30

Spanish

I—ELEMENTARY COURSE—Knapp's grammar ; modern Spanish prose. Mr. SPERANZA

Tu., Th., and F. at 9.30

Course I is open to Freshmen and Sophomores who have passed in the prescribed modern language courses ; it is open also to Juniors, and is optional in the Senior year.

II—COMPOSITION—Modern prose and poetry ; literature of the golden age, Don Quijote. Mr. SPERANZA

M., W., and F. at 2.30

III—COMPOSITION—Literature of the golden age—Lope de Vega, J. R. de Alarcon, Calderon—Modern prose and poetry. Mr. SPERANZA

M., W., and F. at 3.30

* IV—SPANISH MEDIEVAL POETRY, especially in reference to the "Cid." Mr. SPERANZA

Tu. and Th. at 1.30

Sanskrit, see Oriental Languages.

SCHEME OF REQUIRED STUDIES, 1893-4

MONDAY				TUESDAY				WEDNESDAY				THURSDAY				FRIDAY				
Hours	9½ to 10½ 10½	10½ to 11½ 11½	11½ to 12½ 12½	12½ to 1½ 1½	1½ to 2½ 2½			9½ to 10½ 10½	10½ to 11½ 11½	11½ to 12½ 12½	12½ to 1½ 1½	1½ to 2½ 2½	2½ to 3½ 3½	9½ to 10½ 10½	10½ to 11½ 11½	11½ to 12½ 12½	12½ to 1½ 1½	1½ to 2½ 2½		
1ST SECTION	French and German				French and German				French and German				French and German				French and German			
2D SECTION	Pk	Y	B	G	G	B	Cr	Y	Cr	Y	B	Cr	Y	B	Cr	Y	B	Cr		
3D SECTION	Cr	Y	B	G	G	B	Cr	Y	Cr	Y	B	Cr	Y	B	Cr	Y	B	Cr		
1ST SECTION	French and German				French and German				French and German				French and German				French and German			
2D SECTION	McC	Py	C	S.M.	Cy	W	G	40	Ca	McC	Py	16	Chemistry Work in Laboratory	1½ to 3½	Chemistry Work in Laboratory	1½ to 3½	Ca	McC		
1ST SECTION	D or M-S				H				D or M-S				H				H			
2D SECTION	H				D or M-S				D or M-S				H				H			

B . . .	Mr. Baldwin (Rhetoric)	D . . .	Professor Dunning (History, 1st term)	Pk . . .	Professor Peck (Latin)
C . . .	Professor Chandler (Chemistry)	G . . .	Professor Goodwin (Mathematics)	Py . . .	Professor Perry (Greek)
Ca . . .	Professor Carpenter (Rhetoric)	H . . .	Dr. Hyslop (Logic and Psychology)	Sm . . .	School of Mines
Cr . . .	Mr. Cooper (Latin)	McC . . .	Dr. McCrea (Latin)	W . . .	Professor Woodberry (Literature)
Cy . . .	Mr. Colby (History)	M-S . . .	Professor Mayo-Smith (Political Economy, 2d term)	Y . . .	Dr. Young (Greek)

SCHEME OF ELECTIVE

HOURS	MONDAY	TUESDAY
9½ to 10½	Physics III. Chemistry II. Mathematics II. Greek VI. German II. French II. Architecture I. Italian II.	Physics IV. Chemistry II. Sanskrit I. Italian IV. Rhetoric I. Spanish I.
10½ to 11½	Greek I. Mathematics I. Philosophy IX. Language. Botany III. Architecture I. Law I.	Greek IX. Mathematics I. Latin IV. Greek I. French VIII. Chemistry III. (1st Div.). History III. Architecture V. Coll. of P. and S. I. (at 10). Law I.
11½ to 12½	Greek IV. English I. Astronomy I. Latin I. and III. Law VI. Physics I. and II.	Greek II. Chemistry III. (2d Div.). Latin II. English VI. Astronomy I. French IV. Architecture II. Law VI. Coll. of P. and S. II. (at 11).
12½ to 1½	Latin IX. English V. Chemistry III. German V. Architecture IV. Chemistry I. (Sophs.). Coll. P. and S. II. (at 12). Coll. P. and S. IV. (1st term).	Mathematics III. English IX. ¹ English III. Geology II. German VI. French VII. Spanish IV. Astronomy II. Coll. P. and S. IV. (2d term).
1½ to 2½	Logic, Latin VI. History I. and X. French III. Physiology I.	Psychology, History, and Political English XIII. Latin VII. Spanish IV. History I and X. Mineralogy I. Coll. of P. and S. III. (1-3). Semitic X.
2½ to 3½	Philosophy III. German IV. French I. Architecture VI. Biology III. German III. Italian I. Spanish II. Law IV.	Literature III. Philosophy II. History IV. German II. Botany IV. Biology III. Semitic VI. Architecture VII. and VIII. Coll. of P. and S. III. and IV. ² Law IV.
3½ to 4½	Political Economy I. German VII. Botany V. Biology III. Italian III. Spanish III. Architecture VI. Semitic II.	Political Economy V. (2d term). History II. German VIII. Botany IV. Biology III. Semitic VII. Architecture VII. and VIII. Coll. of P. and S. IV. ²
4½ to 5½	Semitic I. Architecture VI.	Political Economy IV. Semitic III. (4½-6). Semitic VII. (1st term).
5 to 6	Coll. of P. and S. V.	Coll. of P. and S. V.

¹ Not given, 1893-4.² Laboratory practice, Tu. and Th. 2 to 4, or W. and F. 2 to 4.

STUDIES, 1893-4

WEDNESDAY	THURSDAY	FRIDAY
Greek X. Physics III. Mathematics II. German I. French II. Sanskrit IV. Italian II.	Physics IV. Rhetoric I. Mathematics V. (2d Div.). Astronomy III. Italian IV. Spanish I. Architecture III.	Physics III. Chemistry II. German I. French II. Italian II. Sanskrit I. Spanish I.
Greek III. Mathematics I. Mathematics V. Philosophy IX. English II. Language. Geology III. History III. Architecture IV. Coll. of P. and S. I. (at 10). Law I.	Greek I. Mathematics IV. Geology III. Architecture III. Coll. of P. and S. I. (at 10). Latin IV.	Mathematics IV. English III. Latin I. and III. Philosophy IX. English X. and XI. Geology III. History III.
Greek IV. Mathematics IV. English I. English XII. English VII. and VIII. Law II. Coll. of P. and S. II. (at 11). Architecture IX. (2d term).	Greek V. Physics I. and II. Latin II. English VI. Mathematics V. (1st Div.) Astronomy II. Mechanics. Chemistry III. (2d Div.) Law V. Architecture III. and IX. Coll. of P. and S. II. (at 11).	Greek II. English XII. Botany I. and II. Law V. Philosophy XIII. English II. Architecture IV. Mechanics. English VII. and VIII.
Mathematics III. Latin VIII. Greek VII. German V. Literature I. Iranian I. Geology II.	Mathematics III. Chemistry III. Geology II. English V. English IX. ¹ German VI. Botany VI. Coll. of P. and S. IV. (1st term).	Latin IX. Philosophy XII. Chemistry III. (1st Div.). Literature I. Astronomy III. Iranian I. Chemistry I. (Sophs.). Coll. of P. and S. IV. (2d term.)
Economy are required studies	for Juniors in this hour every	day.
Latin VI. History I. and X. Literature II. French III. Mineralogy I. Coll. of P. and S. III. (1-3).	History I. and X. English XIII. Iranian III. and IV. French VI. ¹ French VII. Coll. of P. and S. III. (1-3). Spanish IV.	Latin VII. Political Economy I. French III. Coll. of P. and S. III. (1-3). Semitic X.
English XIV. Philosophy III. German IV. French I. Geology I. Biology V. German X. Italian I. Spanish II. Architecture VII. Coll. of P. and S. III. and IV. ² Law IV.	Literature III. Philosophy II. German IX. (2d term.) French XI. Geology I. Biology II. (3-5). Architecture VI. and VIII. Semitic VI. Coll. of P. and S. III. and IV. ² Law III.	Political Economy I. (2½-4). French I. Biology II. (3-5). Architecture VIII. Italian I. Spanish II. Coll. of P. and S. III. and IV. ² Law III.
Political Economy I. German VII. Botany V. German III. Biology V. Architecture VII. Italian III. Spanish III. * Coll. of P. and S. IV. ² Semitic VII. (1st term).	Political Economy V. (2d term.) History II. Pedagogy II. German VIII. Biology II. (3-5). Architecture VI. and VIII. Coll. of P. and S. IV. ² Semitic II.	Botany V. Biology II. (3-5). Italian III. Spanish III. Architecture VIII. Semitic VII. (1st term). Coll. of P. and S. IV. ²
Biology V. Semitic I. Semitic IV. (4½-6). Law VII. (2d term).	Political Economy IV. Architecture VI.	Philosophy VIII. (2d term). Law VII. (2d term).
Coll. of P. and S. V.	Coll. of P. and S. V.	

¹ Not given, 1893-4.² Laboratory practice Tu. and Th. 2 to 4, or W. and F. 2 to 4.

REGISTER OF STUDENTS

1893-4

SENIOR CLASS

NAME	RESIDENCE	CITY ADDRESS
David D. Ackerman	<i>Paterson, N. J.</i>	(274 Hamilton ave.)
Paul Armitage	<i>Bay Shore, L. I.</i>	295 Church st.
Lawrence Atterbury	<i>New York City</i>	141 West 86th st.
William Hayden Baker	<i>Schaghticoke, N. Y.</i>	248 West 53d st.
John Philip Benkard	<i>New York City</i>	127 East 24th st.
James Fuller Berry	<i>New York City</i>	239 West 44th st.
Francis Hill Bowman	<i>New York City</i>	148 East 27th st.
Charles Joseph Breck, Jr.	<i>New York City</i>	343 West 56th st.
George Henry Broughton, Jr.	<i>New York City</i>	2 East 15th st.
Francis Tillon Buck	<i>New York City</i>	158 West 48th st.
Russell Ely Burke	<i>New York City</i>	17 East 55th st.
Spencer Carleton	<i>New York City</i>	53 West 45th st.
George Stanislaus Connell	<i>New York City</i>	154 West 87th st.
Harold Coburn Cook	<i>Flushing, N. Y.</i>	
Walter Wheeler Cook	<i>Flushing, N. Y.</i>	
Eugene Howell Daly	<i>New York City</i>	2050 Madison ave.
Alexander White Doolittle	<i>Waterville, N. Y.</i>	258 West 55th st.
William Coffin Dornin, Jr.	<i>New York City</i>	52 West 55th st.
Horace Dowie	<i>Brooklyn, N. Y.</i>	(363 Jefferson ave.)
Harold Sharpe Emerson	<i>Brooklyn, N. Y.</i>	(125 Gates ave.)
Shepherd Ivory Franz	<i>Jersey City, N. J.</i>	(62 Cottage st.)
Joseph Peter Grace	<i>New York City</i>	31 East 79th st.
Otto Theodore Hess	<i>New York City</i>	307 West 86th st.
Philip Redington Mudge Hildreth,	<i>New York City</i>	48 Irving pl.
James Cox Howell	<i>Highland Mills, N. Y.</i>	
Ernest Valentine Hubbard	<i>New York City</i>	138 West 74th st.
Francis Edward Hyslop	<i>Delphi, Ind.</i>	171 West 81st st.
David Stewart Iglehart	<i>New York City</i>	106 East 86th st.
Meir Jaffa	<i>New York City</i>	240 East 82d st.
Herbert McLeod Johnston	<i>Plainfield, N. J.</i>	402 East 5th st.
Shepherd Knapp, Jr.	<i>New York City</i>	266 Lexington ave.
George William Kosmak	<i>New York City</i>	23 East 93d st.

JUNIOR CLASS

141

NAME	RESIDENCE	CITY ADDRESS
Horatio Sheafe Krans	<i>New York City</i>	71 Irving pl.
Medwin Leale	<i>New York City</i>	604 Madison ave.
Prescott Le Breton	<i>New York City</i>	331 West 57th st.
Walter Henry Liebmann	<i>New York City</i>	32 East 72d st.
Campbell Erie Locke	<i>New York City</i>	23 West 53d st.
Frederic Ludlow Luqueer	<i>Brooklyn, N. Y.</i>	(907A Lafayette ave.)
William Jeremiah Millard	<i>New York City</i>	133 West 4th st.
Frederick Felix Neuman	<i>New York City</i>	604 Lexington ave.
Carlos Hinckley Oliver	<i>Burlington, Vt.</i>	313 West 50th st.
George Mitchell Parker	<i>Elyria, O.</i>	
Albert Capron Phillips	<i>New York City</i>	205 Boulevard
Theodore Irving Reese	<i>Dobbs Ferry, N. Y.</i>	29 East 28th st.
Winfred Chesney Rhoades	<i>Mount Vernon, N. Y.</i>	(141 S. Second ave.)
Harry Pelham Robbins	<i>New York City</i>	419 Fifth ave.
Milton Stanley Roth	<i>New York City</i>	65 East 61st st.
Edward Sandford	<i>Yonkers, N. Y.</i>	
George Reese Satterlee	<i>New York City</i>	60 East 78th st.
Oscar Roland Seitz	<i>New York City</i>	1186 Lexington ave.
Harry Judson Shaw	<i>Rockland, Me.</i>	175 East 71st st.
William West Shaw	<i>New York City</i>	19 West 53d st.
John Dempster Sherman, Jr.	<i>Peekskill, N. Y.</i>	175 East 71st st.
Henry Merwin Shrad y	<i>New York City</i>	8 East 66th st.
Frederick Herbert Sill	<i>New York City</i>	243 West 45th st.
Clarence Bishop Smith	<i>New York City</i>	101 East 69th st.
Charles R. Swords	<i>New Hamburg, N. Y.</i>	29 East 28th st.
Guy Hanford Turrell	<i>New York City</i>	1731 Washington ave.
Henry Ayres Uterhart	<i>New York City</i>	552 East 85th st.
George John Wardenburg	<i>Brooklyn, N. Y.</i>	(322 Adelphi st.)
Edwin Dunning Weed	<i>Flushing, N. Y.</i>	
Frederic De Witt Wells	<i>New York City</i>	Hotel Waldorf
Arthur Donald Williams	<i>New York City</i>	15 West 122d st.
Louis William Wormser	<i>New York City</i>	836 Fifth ave.
Frederick Amaziah Wright	<i>New York City</i>	110 West 76th st.
Edwin Garvin Zabriskie	<i>Flatbush, N. Y.</i>	
Seniors.....		66

JUNIOR CLASS

NAME	RESIDENCE	CITY ADDRESS
Francis Eugene Bauch	<i>Brooklyn, N. Y.</i>	(1059 Greene ave.)
Claude Selwyn Beckwith	<i>Paterson, N. J.</i>	(232 Broadway)
William Fenwick Beekman	<i>New York City</i>	119 East 18th st.
Herbert Doty Brown	<i>New York City</i>	9 West 129th st.
George Philip Bryant	<i>New York City</i>	75 West 12th st.
Charles Frederick Buckley	<i>Brooklyn, N. Y.</i>	(802 Carroll st.)
William L. Cahn	<i>New York City</i>	40 East 72d st.
Philetus Mortimer Capen	<i>New York City</i>	48 East 63d st.
Guy Wetmore Carryl	<i>New York City</i>	33 West 42d st.

NAME	RESIDENCE	CITY ADDRESS
Roger Lewis Conant	Newark, N. J.	21 Park pl.
John Hamilton Potter Conover	South Amboy, N. J.	
Frederick Coykendall	Rondout, N. Y.	233 West 45th st.
Frederick Morse Cutler	New York City	2109 Madison ave.
Schuyler Emerson Day	New York City	13 West 63d st.
Henry William Egner, Jr.	Newark, N. J.	(1015 Broad st.)
Hamilton Fish, Jr.	New York City	53 Irving pl.
John Driscoll FitzGerald II.	Newark, N. J.	(57 Liberty st.)
Clarence Randolph Freeman	New York City	123 East 74th st.
William Oscar Gennert	Greenville, N. J.	24 & 26 East 13th st.
George Balthasar Germann	Brooklyn, N. Y.	(90 Norman ave.)
Felix Mortimer Gernsheim	New York City	1 East 44th st.
Lawrence Hasbrouck	New York City	39 West 90th st.
Henry Eugene Houston	Richmond Hill, N. Y.	
Victor William Hungerford	New York City	121 West 69th st.
Conrad Saxe Keyes	Brooklyn, N. Y.	(27 Monroe st.)
Maulsby Kimball	Kenosha, Wis.	38 West 34th st.
Edward Lazansky	Brooklyn, N. Y.	(224 Carleton ave.)
William Thomas Mason	New York City	37 West 48th st.
George Frederick Middendorf, Jr.	Brooklyn, N. Y.	(90 Schenck ave.)
Edward Elbert Mitchell	Flushing, N. Y.	74 Leonard st.
James Macdonald Mitchell	Flushing, N. Y.	74 Leonard st.
Charles Gustave Mourraille	New York City	74 West 12th st.
Rudolph Neeser	New York City	2 West 33d st.
Walter Stephen Newell	New York City	20 East 127th st.
Louis Hasbrouck Newkirk	Monticello, N. Y.	38 West 34th st.
Charles Walton Ogden, Jr.	New York City	31 West 20th st.
Edward Codman Parish	New York City	1 West 19th st.
Henry Berry Pogson	New Brunswick, N. J.	601 Lexington ave.
Frank Judson Pope	Elizabeth, N. J.	12 West 31st st.
William Howe Ripley	New York City	605 Lexington ave.
James Naumburg Rosenberg	New York City	122 West 87th st.
Issak Max Rubino	New York City	24 East 106th st.
Frederic White Shepard	Brooklyn, N. Y.	(81 Columbia Heights)
Raymond Gold Shipman	New York City	213 West 71st st.
William Abbott Slayback	New York City	416 Madison ave.
Joseph Percy Smyth, Jr.	Brooklyn, N. Y.	(851 President st.)
Joel Elias Spingarn	New York City	118 East 58th st.
Faneuil Dunkin Stein	New York City	30 West 15th st.
Clarence Storm	New York City	41 West 81st st.
Joseph Suydam Stout, Jr.	New York City	35 East 67th st.
William Dana Street	Brooklyn, N. Y.	(173 Macon st.)
David Houghtaling Taylor	New York City	16 East 56th st.
Stephen Fraser Thayer	Yonkers, N. Y.	(75 Hawthorne ave.)
Frederic Oakman Virgin	New York City	16 East 125th st.
Richmond Weed	Flushing, N. Y.	(30 Jamaica ave.)
James Perry Worden	Hastings-on-Hudson, N. Y.	
Juniors.....		56

SOPHOMORE CLASS

NAME	RESIDENCE	CITY ADDRESS
Charles Siedler Adams	<i>Brooklyn, N. Y.</i>	(213 Hancock st.)
Carl Lucas Alsberg	<i>New York City</i>	169 East 116th st.
David Wilson Armstrong, Jr.	<i>New York City</i>	Barrett House, 43d st. and Broadway
Edward Maitland Armstrong	<i>New York City</i>	58 West 10th st.
John Richard Atwill	<i>Kansas City, Mo.</i>	238 West 111th st.
Rogers Hammond Bacon	<i>New York City</i>	22 West 10th st.
Edwin Atkinson Bayles	<i>Orange, N. J.</i>	(408 Main st.)
Edwin Beer	<i>New York City</i>	38 West 77th st.
Armitage Bradley	<i>New York City</i>	115 West 91st st.
Granville Ingraham Burr	<i>Yonkers, N. Y.</i>	(63 Buena Vista ave.)
William Samuel Cherry	<i>New York City</i>	244 West 71st st.
David Cohn	<i>Paterson, N. J.</i>	(112 Ellison st.)
Maurice Cohn	<i>Paterson, N. J.</i>	(112 Ellison st.)
Charles Dupont Coudert	<i>New York City</i>	36 West 48th st.
Edward Hamilton Daly	<i>New York City</i>	19 East 62d st.
Henry Louis Austin Pick	<i>New York City</i>	44 Sixth ave.
Frederick Seward Gibson	<i>New York City</i>	41 East 10th st.
Everett Willoughby Gould	<i>Watertown, N. Y.</i>	440 Manhattan ave.
George Greer	<i>Rye, N. Y.</i>	
Robert Hurtin Halsey	<i>Astoria, N. Y.</i>	(1000 Boulevard.)
Thomas Albert Halstead	<i>Flushing, N. Y.</i>	27 Queen's ave.
William Henry Hays	<i>New York City</i>	13 East 54th st.
Francklyn Chase Hoyt	<i>Country Club, Westchester, N. Y.</i>	
John Duer Irving	<i>New Brighton, S. I.</i>	
Theodore Harold Joseph	<i>New York City</i>	32 East 74th st.
Charles Nelson Kent, Jr.	<i>Merrick, N. Y.</i>	10 Spruce st.
Richard Peabody Kent	<i>Merrick, N. Y.</i>	10 Spruce st.
Emil Alexander Charles Keppler	<i>New York City</i>	130 West 58th st.
Howard Crosby Kretz	<i>New York City</i>	149 West 12th st.
Walter Colouzzi Kretz	<i>New York City</i>	149 West 12th st.
Alfred Louis Kroeber	<i>New York City</i>	316 West 89th st.
Richard Lawrence	<i>New York City</i>	13 East 22d st.
Irving Lehman	<i>New York City</i>	5 East 62d st.
Albert Ralph Lesinsky	<i>New York City</i>	25 East 72d st.
Alexander Griswold Lesley	<i>Spuyten Duyvil, N. Y.</i>	
Julian Clarence Levi	<i>New York City</i>	137 West 81st st.
Frederick Montgomery Livingston	<i>Brooklyn, N. Y.</i>	(370 Greene ave.)
Robert Glenn McCrea	<i>Brooklyn, N. Y.</i>	(533 Franklin ave.)
Robert Austen McCulloch	<i>New Brighton, S. I.</i>	
William Milwitzky	<i>Newark, N. J.</i>	2078 Seventh ave.
Asa Warren Parker, Jr.	<i>Brooklyn, N. Y.</i>	(149 Henry st.)
Frederick Augustus Peters	<i>New York City</i>	1052 Tiffany st.
William Popper	<i>Brooklyn, N. Y.</i>	(60½ Bainbridge st.)
Joseph Meyer Proskauer	<i>Mobile, Ala.,</i>	138 West 97th st.

NAME	RESIDENCE	CITY ADDRESS
Franklin Edwin Reese	<i>Westfield, N. J.</i>	
Isidorus Ross	<i>New York City</i>	2078 Seventh ave.
Allan Conn Rowe	<i>Brooklyn, N. Y.</i>	(529 Franklin ave.)
Sidney Samuel Schwab	<i>New York City</i>	8 East 74th st.
Herman Francis Senftner	<i>Brooklyn, N. Y.</i>	(436 Putnam ave.)
Samuel Swayze Seward, Jr.	<i>New York City</i>	185 Lexington ave.
Walter Conwell Shoup	<i>New York City</i>	100 West 89th st.
Philip Smith	<i>Scranton, Penn.</i>	534 West 45th st.
John Hebard Snyder	<i>West Hoboken, N. J.</i>	(121 Palisade ave.)
John Tilly, Jr.	<i>Westchester, N. Y.</i>	
Carl Manfred Uhl	<i>New York City</i>	113 East 60th st.
John Alfred Valentine	<i>Newton, N. J.</i>	
Richard Weil	<i>New York City</i>	711 Madison ave.
Faneuil Suydam Weisse	<i>New York City</i>	46 West 20th st.
William Walter Willis	<i>Brooklyn, N. Y.</i>	(500 Clinton ave.)
Sophomores.....		59

FRESHMAN CLASS

NAME	RESIDENCE	CITY ADDRESS
Ellery Oswald Anderson	<i>New York City</i>	132 East 35th st.
Richard Perrin Appleton	<i>Nutley, N. J.</i>	
Woodward Babcock	<i>Far Rockaway, N. Y.</i>	21 West 49th st.
Philip Bissell	<i>New York City</i>	142 West 44th st.
Theodore Lawrence Bogert	<i>Flushing, N. Y.</i>	
Arthur Bookman	<i>New York City</i>	9 East 62d st.
Charles William Boote	<i>Yonkers, N. Y.</i>	(128 Webster ave.)
Hans von Briesen	<i>New York City</i>	4 East 48th st.
Philip Ernest Brodt	<i>Geneseo, N. Y.</i>	
Frank Hoag Brooks	<i>New York City</i>	142 West 103d st.
Eugene Carroll Brown	<i>Brooklyn, N. Y.</i>	(976 Kent ave.)
William Joseph Clarke	<i>New York City</i>	148 East 45th st.
Frederick Hassard Cluff	<i>Brooklyn, N. Y.</i>	(220 Garfield pl.)
William Williams Comstock	<i>New York City</i>	62 Lexington ave.
George Edward Henry de Braekeleer	<i>New York City</i>	120 West 82d st.
John Hull Deming	<i>Williamsbridge, N. Y.</i>	
Francis Harold Dike	<i>New York City</i>	159 West 129th st.
Walter Strong Edwards	<i>Greenwich, Conn.</i>	
Francis Bertram Elgas	<i>New York City</i>	121 West 87th st.
Charles Henry Ellard	<i>Great Neck, N. Y.</i>	
William Henry Fry	<i>Brooklyn, N. Y.</i>	(319 Ninth st.)
Seymour Keyes Fuller	<i>Brooklyn, N. Y.</i>	(77 Hanson pl.)
George Dudley Gregory	<i>Washington, D. C.</i>	58 West 35th st.
Arthur Benedict Griffin	<i>New York City</i>	882 St. Nicholas ave.
William Bonn Gunton	<i>New York City</i>	225 East 17th st.
Edgar Arnold Hellman	<i>New York City</i>	200 West 44th st.
Walter Leon Hess	<i>New York City</i>	307 West 86th st.

NAME	RESIDENCE	CITY ADDRESS
Charles Knap Hitchcock, Jr.	<i>Bayonne, N. J.</i>	
Bernard Michel Kaplan	<i>New York City</i>	329 East 69th st.
Arthur Lee	<i>Brooklyn, N. Y.</i>	(191 Gates ave.)
Maxwell Lester	<i>Brooklyn, N. Y.</i>	(69 First pl.)
Steven Lindenfelser	<i>New York City</i>	391 East 10th st.
John Harry Lyon	<i>Milburn, N. J.</i>	21 Park Row
Arthur Lockett Marvin	<i>New York City</i>	332 West 58th st.
Burdette Kellogg Marvin	<i>New York City</i>	332 West 58th st.
Edward Gibbs Merrill	<i>New York City</i>	147 West 12th st.
Eugene Moses	<i>New York City</i>	157th st. & St. Nicholas ave.
John Hill Prentice	<i>Brooklyn, N. Y.</i>	(170 Columbia Heights.)
Reginald William Pressprich	<i>New York City</i>	411 West 154th st.
Arthur Meyer Price	<i>New York City</i>	113 West 75th st.
Albert William Putnam	<i>New York City</i>	16 Manhattan Square, S.
Charles Chapin Sargent, Jr.	<i>New York City</i>	29 East 73d st.
George Washington Senftner	<i>Brooklyn, N. Y.</i>	(436 Putnam ave.)
Robert Willis Shearman	<i>Long Island City, N. Y.</i>	(398 Van Pelt st.)
Oliver Smith	<i>New York City</i>	460 West 44th st.
Eugene Edward Spiegelberg	<i>New York City</i>	156 West 44th st.
Isaac Harold Stern	<i>New York City</i>	55 West 50th st.
Morris Lincoln Strauss	<i>College Point, N. Y.</i>	
Edwin Platt Tanner	<i>Paterson, N. J.</i>	(72 Pearl st.)
Enos Thompson Throop, Jr.	<i>New York City</i>	361 West 57th st.
John Joseph Todd	<i>Morristown, N. J.</i>	24 East 47th st.
William Rogers Westerfield	<i>New York City</i>	109 West 123d st.
George Wilson Wharton	<i>Brooklyn, N. Y.</i>	(98 St. Marks ave.)
Charles Frederic Wheaton	<i>Yonkers, N. Y.</i>	(224 Buena Vista ave.)
William Winans	<i>Asbury Park, N. J.</i>	
Alexander Henry William Zurban	<i>New York City</i>	334 Lenox ave.
Freshman Class..... 56		

SPECIAL STUDENTS NOT CANDIDATES FOR A DEGREE

NAME	RESIDENCE	CITY ADDRESS
Milton Dave Bachrach	<i>New York City</i>	1903 Madison ave.
George Raimes Beach	<i>Jersey City, N. J.</i>	(105 Hoboken ave.)
Nathan Isaac Bijur	<i>New York City</i>	46 East 73d st.
Samuel Henry Bijur	<i>New York City</i>	46 East 73d st.
Hiram Collenberger Bloomingdale	<i>New York City</i>	21 East 63d st.
Tristan Charles Boekelman	<i>New York City</i>	106 West 45th st.
Louis Floro Chibas	<i>Guantanamo, Cuba</i>	846 Lexington ave.
Melvin Henry Dalberg	<i>New York City</i>	78 East 91st st.
Eugene Denton	<i>Hyde Park, N. Y.</i>	
Frederic Clifford Earl	<i>Bayonne, N. J.</i>	(833 Avenue C.)
Clarence Henry Eckerson	<i>Marlboro', N. Y.</i>	351 West 25th st.
Addison Ely, Jr.	<i>Rutherford, N. J.</i>	

NAME	RESIDENCE	CITY ADDRESS
Eugene May Heath	<i>Louisville, Ky.</i>	138 East 47th st.
Burt Foster Howard	<i>Glencoe, Ill.</i>	Governor's Island
Edward Aloysius Kane	<i>Brooklyn, N. Y.</i>	(167 Congress st.)
Charles Henry Ketcham	<i>Yonkers, N. Y.</i>	(148 North Broadway.)
Clarence Broughton Kilmer	<i>Rock City Falls, N. Y.</i>	9 East 57th st.
Edwin Marks La Roche	<i>Brooklyn, N. Y.</i>	32 Vesey st.
William Goadby Loew	<i>New York City</i>	25 West 57th st.
Russell Hillard Loines	<i>Brooklyn, N. Y.</i>	(26 Garden pl.)
Aaron Wager Maddox	<i>Brooklyn, N. Y.</i>	(669½ Quincy st.)
Albert Ossar Miller, Jr., LL.B.	<i>Passaic, N. J.</i>	
Leonard Jerome Obermeier	<i>New York City</i>	155 East 55th st.
James William O'Connor	<i>New York City</i>	8 East 12th st.
Edward Saville Ogden	<i>New York City</i>	14 East 24th st.
Warren Waverly Phelan	<i>Brooklyn, N. Y.</i>	(108 South 5th st.)
Arthur Augustus Powers	<i>New York City</i>	301 West 57th st.
William Menken Schnitzer	<i>New York City</i>	112 East 73d st.
Dudley Daniel Sicher	<i>New York City</i>	54 East 65th st.
Barret Newton Stachelberg	<i>New York City</i>	1054 Fifth ave.
Abram Richard Stern	<i>New York City</i>	55 West 50th st.
Special Students.....		31

STUDENTS OF THE LAW SCHOOL PURSUING STUDIES IN THE SCHOOL OF ARTS

William Beers Crowell	<i>New York City</i>	1044 Fifth ave.
Edward Pfeffer	<i>New York City</i>	421 St. Nicholas ave.
Henry Evelyn Pierrepont, Jr.	<i>Brooklyn, N. Y.</i>	(216 Columbia Heights)
Lothrop Randolph	<i>Mount St. Vincent, N. Y.</i>	
Louis Stürcke	<i>New York City</i>	423 East 84th st.
William Bell Wait, Jr.	<i>New York City</i>	412 Ninth ave.
Students from the Law School....		6

STUDENTS OF THE SCHOOL OF MINES PURSUING STUDIES IN THE SCHOOL OF ARTS

John Edward Stow Sutton	<i>Brooklyn, N. Y.</i>	(118 Montague st.)
Students from the School of Mines.....		1

STUDENTS IN THE COLLEGIATE COURSE FOR WOMEN

Elizabeth Frances Nammack	<i>New York City</i>	344 Madison st.
Students in the Collegiate Course for Women.....		1

SUMMARY

Seniors	66
Juniors	56
Sophomores	59
Freshmen	56
Special Students	31
Students from the School of Law	6
Students from the School of Mines	1
Students in the Collegiate Course for Women	1
Total	276

HONORS AND PRIZES, 1893

PRIZE OF THE ALUMNI ASSOCIATION

To the most faithful and deserving student of the Graduating Class
 Prize of \$50.....EDWARD PEALE MACMULLEN

CHANLER HISTORICAL PRIZE

ABRAHAM BIJUR

THE SOCIETY'S GREEK AND ENGLISH PRIZES

(Not awarded)

PRIZE SCHOLARSHIPS, \$100 EACH

JUNIOR CLASS:

In Greek	FREDERIC LUDLOW LUQUEER
Honorable mention	OTTO THEODORE HESS
In Latin	HAROLD SHARPE EMERSON
Honorable mention	SHEPHERD IVORY FRANZ
In English	HERBERT MCLEOD JOHNSTON
Honorable mention	OTTO THEODORE HESS
In Mechanics	WALTER WHEELER COOK
Honorable mention	JAMES FULLER BERRY
In Physics	WALTER WHEELER COOK
Honorable mention	JAMES FULLER BERRY

SOPHOMORE CLASS:

In Greek	WILLIAM OSCAR GENNERT
Honorable mention	{ MEIR JAFFA
	{ EDWARD THOMAS JOHNSTON
In Latin	WILLIAM DANA STREET
Honorable mention	{ WILLIAM OSCAR GENNERT
	{ CONRAD SAXE KEYES
In History	MAULSBY KIMBALL

Honorable mention.....	{	WILLIAM THOMAS MASON
In Mathematics.....		FREDERICK MORSE CUTLER
Honorable Mention.....		Not awarded
In Chemistry.		FREDERICK COYKENDALL
Honorable mention.....		JAMES NAUMBURG ROSENBERG
		HARRY SUTTON BURROUGHS

FRESHMAN CLASS:

In Greek.....		ISIDORUS ROSS
Honorable mention.....		EDWIN BEER
In Latin.....		RICHARD WEIL
Honorable mention.....	{	ALFRED FABIAN HESS
		CARL LUCAS ALSBERG
		JOHN DUER IRVING
		ALFRED LOUIS KROEBER
In Rhetoric.....		RICHARD WEIL
Honorable mention.....	{	ROBERT GLEN MCCREA
		SAMUEL SWAYZE SEWARD, JR.
In Mathematics.....		ISIDORUS ROSS
Honorable mention.....	{	JOSEPH M. PROSKAUER
		ROBERT AUSTEN MCCULLOCH
		WALTER COLOUZZI KRETZ

HONOR MEN OF THE YEAR 1893

SENIOR CLASS

<i>New Testament Greek</i>	<i>English VI</i>
JOHN LOVETT RILE, JR.	MIDDLETON SMITH BORLAND
<i>Classic Greek</i>	<i>English VII</i>
WILLIAM ADDISON HERVEY	LEONARD BEECHER MCWHOOD
<i>Greek Art</i>	<i>English VIII</i>
FREDERIC EDGAR UNDERHILL	STEPHEN HENRY KEATING
<i>Latin</i>	<i>English IX</i>
GEORGE N. OLCOTT	STEPHEN HENRY KEATING
WILFRED LAY	<i>English XI</i>
SANDFORD LOUIS ROTTER	STEPHEN HENRY KEATING
<i>English I</i>	<i>Literature I</i>
GEORGE LAWRENCE MYERS	STEPHEN HENRY KEATING
<i>English III</i>	<i>Political Philosophy</i>
WILLIAM ADDISON HERVEY	WILLIAM ROBERT SHEPHERD
<i>English IV</i>	<i>German (Faust)</i>
HERBERT TREADWELL WADE	WILLIAM ADDISON HERVEY

Iranian I

CASPER LEVIAS

French Literature of 17th Century

EDWARD PEALE MACMULLEN

Italian 2d Year

GEORGE N. OLCOTT

Political Economy

WILLIAM ROBERT SHEPHERD

Constitutional History of England

STEPHEN HENRY KEATING

*Constitutional History of Europe and
the United States*

WILLIAM ROBERT SHEPHERD

Ethics

WALTER TAYLOR MARVIN

Practical Astronomy

WALTER TAYLOR MARVIN

Botany

HENRY EDWARD CRAMPTON, JR.

Physics

JOSEPH BIJUR

SAMUEL GEO. FITZHUGH TOWNSEND

ARTHUR CHARLES KLETZSCH

Chemistry

LEFFERT LEFFERTS

HERBERT TREADWELL WADE

DANA CLEMMER WELLS

Anatomy

FRED TEMPLETON ZABRISKIE

Experimental Psychology

LEONARD BEECHER MCWHOOD

History of Philosophy

WALTER TAYLOR MARVIN

JUNIOR CLASS

Mechanics

JAMES FULLER BERRY

EUGENE HOWELL DALY

English Drama to 1640

HARRY HARKNESS FLAGLER

XIX Century Literature

HERBERT MCLEOD JOHNSTON

SHEPHERD KNAPP, JR.

Political Economy

CLARENCE BISHOP SMITH

FREDERICK AMAZIAH WRIGHT

FREDERIC LUDLOW LUQUEER

Biology

JOHN DEMPSTER SHERMAN, JR.

Logic and Psychology

FREDERIC LUDLOW LUQUEER

CLARENCE BISHOP SMITH

SHEPHERD KNAPP, JR.

Mathematics

SHEPHERD KNAPP, JR.

Latin

HAROLD SHARPE EMERSON

SHEPHERD IVORY FRANZ

History

CAMPBELL ERIE LOCKE

CLARENCE BISHOP SMITH

ALBERT CAPRON PHILLIPS

Greek

HENRY WALTER BUNN

Milton and the Caroline Poets

HERBERT MCLEOD JOHNSTON

Anglo-Saxon

EDWIN DUNNING WEED

Rhetoric

EUGENE HOWELL DALY
JOHN DEMPSTER SHERMAN, JR.
WARREN WAVERLEY PHELAN

Astronomy

WILLIAM JEREMIAH MILLARD

Physics

History of Philosophy
FREDERIC LUDLOW LUQUEER

WALTER WHEELER COOK
JAMES FULLER BERRY

SOPHOMORE CLASS

History

FRANCIS EUGENE BAUCH
GEORGE BALTHASSAR GERMANN
MAULSBY KIMBALL

Greek

MEIR JAFFA
WILLIAM THOMAS MASON

English Literature

SCHUYLER EMERSON DAY
WILLIAM L. CAHN
JAMES NAUMBURG ROSENBERG

Rhetoric

WILLIAM THOMAS MASON
GEORGE BALTHASSAR GERMANN
WILLIAM L. CAHN

Mathematics

FREDERICK COYKENDALL
GEORGE BALTHASSAR GERMANN
MAULSBY KIMBALL

Latin

WILLIAM DANA STREET
WILLIAM OSCAR GENNERT
CONRAD SAXE KEYES

FRESHMAN CLASS

Greek

ISIDORUS ROSS
RICHARD WEIL
FREDERICK SEWARD GIBSON

Mathematics

ISIDORUS ROSS
JOSEPH M. PROSKAUER
ROBERT AUSTEN MCCULLOCH

Rhetoric

RICHARD WEIL
ROBERT GLENN MCCREA
SAMUEL SWAYZE SEWARD

Latin

RICHARD WEIL
HOWARD CROSBY KRETZ
ALFRED FABIAN HESS.

MODERN LANGUAGES

French, Third Year

HARRY HARKNESS FLAGLER
ERNEST VALENTINE HUBBARD
PRESCOTT LEBRETON

German, Fourth Year (Faust)

LAWRENCE ATTERBURY

Third Year (Literature)

LAWRENCE ATTERBURY

Second Year

WALTER COLOUZZI KRETZ
FRANCIS EUGENE BAUCH
WILLIAM THOMAS MASON

Third Year

FREDERIC LUDLOW LUQUEER

SCHOOL OF LAW

Officers of the Faculty

WILLIAM A. KEENER, A.M., LL.B., *Dean, and Ex-Officio Member of
the University Council*
GEORGE W. KIRCHWEY, A.B., *Secretary*
FRANCIS M. BURDICK, A.M., LL.B., *Elected Delegate to the
University Council*

Faculty

SETH LOW, LL.D., *President*

Professors

WILLIAM A. KEENER, A.M., LL.B., *Kent Professor of Law*
GEORGE M. CUMMING, A.B., *Professor of Law*
FRANCIS M. BURDICK, A.M., LL.B., *Dwight Professor of Law*
GEORGE W. KIRCHWEY, A.B., *Professor of Law*

From the Faculty of Political Science ¹

JOHN W. BURGESS, Ph.D., LL.D., *Professor of History, Political Science, and
Constitutional Law*
MUNROE SMITH, A.M., J.U.D., *Professor of Roman Law and Comparative
Jurisprudence*
FRANK J. GOODNOW, A.M., LL.B., *Professor of Administrative Law*
JOHN B. MOORE, A.B., *Professor of Diplomacy and International Law*

Lecturers

JOHN ORDRONAU, LL.D., *Professor of Medical Jurisprudence*
GEORGE RICHARDS, A.B., LL.B., *Lecturer on Insurance*
GEORGE F. CANFIELD, A.M., LL.B., *Lecturer on Doctrines Peculiar to New
York Law*
HENRY P. STARBUCK, A.B., LL.B., *Lecturer on Common Law Pleading and
Practice*
HERBERT GREEN, A.B., LL.B., *Lecturer on Code Pleading and Practice*

¹ Some of the courses leading to the degrees of Bachelor of Laws and Master of Laws, conferred on the recommendation of the Faculty of Law, are conducted by the above-named Professors in the Faculty of Political Science.

Prize Lecturers

ROBERT THORNE, A.M., LL.B.

RALPH S. ROUNDS, A.B., LL.B.

CHARLES T. TERRY, A.B., LL.B.

Purposes of the School

The design of the School is to prepare students for practice in any State of the Union, and in furtherance of this object the endeavor is made to give a thorough practical and scientific education in the principles of the law included in the following subdivisions :

First.—The COMMON LAW, in its development, and as it exists to-day in the United States, together with such statutory modifications as are common to the several States.

Second.—EQUITY, in its development, and as it exists to-day in the United States.

Third.—The LAW of the STATE of NEW YORK, including PRACTICE and PLEADING under the CODE of CIVIL PROCEDURE, and the doctrines of substantive law peculiar to that State in regard to Trusts of Real and Personal Property, Powers, Perpetuities, Charitable Bequests, Accumulations, Limitation of Future Estates, Descent and Distribution, Mortgages, and Contracts.

Fourth.—The PUBLIC LAW of the UNITED STATES, and the principal EUROPEAN COUNTRIES, including CONSTITUTIONAL LAW, ADMINISTRATIVE LAW, and INTERNATIONAL LAW.

Fifth.—COMPARATIVE JURISPRUDENCE, ROMAN LAW, and the HISTORY of EUROPEAN LAW.

COURSE OF INSTRUCTION

The course of instruction leading to the degree of Bachelor of Laws covers a minimum period of three years, in which there are offered sixty-four hours of instruction per week throughout the year. In the first year are offered thirteen hours of instruction per week ; in the second year twenty-six hours of instruction per week ; in the third year twenty-five hours of instruction per week.

The degree of Bachelor of Laws is conferred only upon students who have passed satisfactory examinations in courses covering a total of thirty-nine hours.

To obtain this degree in three years the student must, ordinarily, take courses covering thirteen hours per week in the first year, fourteen in the second, and twelve in the third.

While no student will be allowed, without the consent of the Faculty, to present himself for examination in any one year in subjects covering more than the number of hours above named, any one desiring to prolong the period of study for the degree of LL.B. beyond three years, will be permitted to reduce thereby the amount of work in any one year necessary for the degree. The Faculty would strongly advise students who have not had an opportunity of thoroughly studying History, Economics, and Finance, so to prolong their course of study in order that they may avail themselves of the opportunity

offered in the School of Political Science for studying these subjects. On page 156 of this circular will be found the courses offered by the University Faculty of Political Science in these subjects.

The degree of Master of Laws is conferred only upon students who, having obtained the degree of Bachelor of Laws, pursue for at least one year a course of study approved by the Faculty of at least ten hours per week, and pass satisfactory examinations therein.

The work selected by a student for a degree in law is subject in every case to the approval of the Dean.

First Year

Required

CONTRACTS—3 hours per week. Professor KEENER

The instruction in Contracts in both the first and second years is confined to a consideration of pure contracts, or the principles involved in the formation, performance, and discharge of contract obligations.

REAL AND PERSONAL PROPERTY—3 hours per week. Professor KIRCHWEY

TORTS—2 hours per week. Professor BURDICK

CRIMINAL LAW AND PROCEDURE—2 hours per week. Professor MOORE

In this course will also be considered Extradition and the Conflict of Penal Laws.

LAW OF PERSONS AND DOMESTIC RELATIONS—1 hour per week. Professor CUMMING

In the Law of Persons and Domestic Relations the instruction is given twice a week from October to February. When not otherwise stated, the course of instruction in any given subject extends through the year.

COMMON LAW PLEADING AND PRACTICE—1 hour per week.

Mr. STARBUCK

In Common Law Pleading and Practice the instruction is given twice a week from February to June. When not otherwise stated, the course of instruction in any given subject extends through the year.

ELEMENTS OF JURISPRUDENCE—1 hour per week. Professor KEENER

The study of Jurisprudence is begun in October.

EQUITY—1 hour per week. Professor KEENER

The course on Equity is not begun until that on Jurisprudence is completed, and not until the class has considered that portion of the Law of Torts dealing with the violation of property rights, and it is confined to a consideration of the nature of Equity, and of the jurisdiction of Equity over Torts.

The instruction in Contracts is based on Keener's selections on Contracts; in Real and Personal Property, on Digby's History of the Law of Real Property and Gray's Cases on Property; in Criminal Law and Procedure, on Beale's Cases on Criminal Law; in Torts, on Pollock on Torts, and Burdick's Cases on Torts; in the Law of Persons and Domestic Relations, on Ewell's Cases on Domestic Relations (student's edition); in Common Law Pleading and Practice, on Stephen on Pleading and on Ames's Cases on Pleading; in Elements of Jurisprudence, on Markby's Elements of Law; in Equity, on Keener's Cases on Equity.

Second Year

CONTRACTS AND QUASI-CONTRACTS—3 hours per week. Professor CUMMING

Quasi-Contracts is not taken up until the subject of Contracts begun in the first year is finished. In the course on Quasi-Contracts are considered the rights and obligations arising independently of the doctrines of either Tort or Contract, as, for example, the recovery of money paid under duress, or under compulsion of law, or where the consideration for the payment has failed because of mistake or otherwise; the doctrine of waiver of tort; the right to recover independently of contract for services rendered, and the right to recover for benefits conferred under an unenforceable contract.

EQUITY—3 hours per week. Professor KEENER

The consideration of the jurisdiction of Equity over Torts begun in the first year is finished, and the study of the law of Trusts of Real and Personal Property is begun.

REAL AND PERSONAL PROPERTY—3 hours per week. Professor KIRCHWEY

ADMINISTRATIVE LAW—2 hours per week. Professor GOODNOW

In this course are considered the organization of administrative authorities; their methods of action, and the control exercised over them by the Legislature and the Courts, particularly through the issue of the writs of mandamus, prohibition, certiorari, habeas corpus, and quo warranto.

AGENCY—2 hours per week. Professor BURDICK

BAILMENTS AND CARRIERS—2 hours per week. Professor CUMMING

COMPARATIVE CONSTITUTIONAL LAW—2 hours per week. Professor BURGESS

The instruction in Comparative Constitutional Law is given three times a week from December to May. Except where otherwise stated the course of instruction in any given subject extends through the year.

HISTORY OF EUROPEAN LAW—2 hours per week. Professor SMITH

INSTITUTES OF ROMAN LAW—2 hours per week. Professor SMITH

This course will not be given during the academic year 1893-94.

SALES OF PERSONAL PROPERTY—2 hours per week. Professor BURDICK

CODE PRACTICE—I hour per week. Mr. GREEN

In the course on Code Practice students are required to prepare the principal papers required in practice under the code. The instruction in Code Practice is given twice a week from February to June. Except where otherwise stated the course of instruction in any given subject extends through the year.

EQUITY PLEADING AND PRACTICE—I hour per week. Mr. TERRY

The instruction therein is given twice a week from October to February, and is given with special reference to the Equity Procedure of the Federal Courts of the United States, students being required to prepare the pleadings and other papers incident to a suit in equity.

INSURANCE—I hour per week. Mr. RICHARDS

The instruction in Insurance is given twice a week from February to June. Except where otherwise stated the course of instruction in any given subject extends through the year.

*Optional*¹

MEDICAL JURISPRUDENCE—3 hours per week. Professor ORDRONAU

The instruction in Medical Jurisprudence ends in December.

The required work for the degree in the second year is fourteen (14) hours a week.

The instruction in Contracts and Quasi-Contracts is based on Keener's Selections on Contracts, and Keener's Cases on Quasi-Contracts; in Equity on Ames's Cases on Trusts; in Real and Personal Property on Gray's Cases on Property; in Insurance on Richards' Treatise and Select Cases on Insurance.

Third Year

CODE PLEADING AND PRACTICE—2 hours per week. Mr. GREEN

Students are required to prepare pleadings and the other principal papers necessary under the Code.

CORPORATIONS—2 hours per week. Professor CUMMING

EQUITY—2 hours per week. Professor KEENER

This course includes the subject of Trusts begun in the second year, and the jurisdiction of Equity over Contracts, including the specific performance, re-formation, and rescission thereof, Bills for Account, Interpleader, and Equitable Conversion.

EVIDENCE—2 hours per week. Professor KIRCHWEY

INTERNATIONAL LAW—2 hours per week. Professor MOORE

NEGOTIABLE PAPER—2 hours per week. Professor BURDICK

PARTNERSHIP—2 hours per week. Professor BURDICK

SURETYSHIP AND MORTGAGE—2 hours per week. Professor CUMMINGS

SYSTEMATIC JURISPRUDENCE—2 hours per week. Professor SMITH

This course is based chiefly on the comparison of Roman with English law.

WILLS AND ADMINISTRATION. 2 hours per week. Professor KIRCHWEY

ADMIRALTY AND SHIPPING—I hour per week

The name of the instructor will be announced hereafter.

CONFLICT OF PRIVATE LAW—I hour per week. Professor SMITH

MUNICIPAL CORPORATIONS—I hour per week. Professor GOODNOW

The instruction in Municipal Corporations is given twice a week from October to February. Except where otherwise stated the instruction extends through the year.

LAW OF TAXATION—I hour per week. Professor GOODNOW

In the Law of Taxation, the instruction is given twice a week from February to June. Except where otherwise stated, the instruction extends through the year.

DOCTRINES PECULIAR TO NEW YORK LAW—I hour per week. Mr. CANFIELD

¹ An optional study cannot be taken for the degree.

The required work for the degree in the third year is twelve (12) hours per week.

The instruction in Corporations is based on Cumming's Cases on Private Corporations ; in Evidence, on Thayer's Cases on Evidence ; in Negotiable Paper, on Ames's Cases on Bills and Notes ; in Partnership, on Ames's Cases on Partnership ; in Wills and Administration, on Gray's Cases on Property.

Moot Courts

Moot Courts are held during the academic year, open only to members of the Second- and Third-year classes.

Courses in the School of Political Science Ranking as Optionals¹ and Recommended to Law Students by the Faculty of Law

CONSTITUTIONAL HISTORY OF EUROPE—3 hours a week for the first term. Professor OSGOOD

CONSTITUTIONAL HISTORY OF THE UNITED STATES—3 hours a week for the second term. Professor BURGESS

CONSTITUTIONAL HISTORY OF ENGLAND—2 hours a week. Professor OSGOOD

HISTORICAL AND PRACTICAL POLITICAL ECONOMY—3 hours a week. Professor MAYO-SMITH

TAXATION AND FINANCE—2 hours a week. Professor SELIGMAN

RAILROAD PROBLEMS—3 hours a week. Professor SELIGMAN

HISTORY OF POLITICAL THEORIES—3 hours a week for the first term. Professor DUNNING

REQUIREMENTS FOR ADMISSION

All applicants for admission must be of good moral character.

Applicants for admission are divided into two classes—those who are and those who are not candidates for a degree.

Candidates for a Degree

Candidates for admission to the First-year class at its formation must be at least eighteen years of age, and of a corresponding increase of age for admission to advanced standing.

Graduates of colleges and scientific schools in good standing, and all persons who have received the academic diploma of the Regents of the State of New York, or who have received the Regents' fifty-count certificate, or a certificate acceptable to the Regents in lieu thereof, are admitted without examination.

¹ An optional cannot be taken for the degree.

All other candidates, except seniors in the School of Arts,¹ must pass the examination required for admission to the Freshman class of the School of Arts of Columbia College, an equivalent amount of French and German being accepted as a substitute for Latin and Greek.

Applicants qualifying as candidates for the degree by presenting the Regents' fifty-count certificate,² or a certificate acceptable to the Regents in lieu thereof, or by passing the examination for admission to the Freshman class of Columbia College, will be required, if entering the First-year class, to qualify on or before the date of entry; if entering the Second-year class, to produce evidence

¹ Seniors in the School of Arts are allowed to take the work of the first year in law for the degree of A.B., thereby reducing the time given to the study of law after graduation, for the degree of Bachelor of Laws, to two years.

² The word count is used by the Regents to represent the numerical value attaching to any given subject, and to obtain a fifty-count certificate one must pass satisfactory examinations in subjects aggregating fifty (50) numerically.

The list of subjects from which one may select fifty counts is as follows, the numerical value being given opposite each subject:

GROUP 1	GROUP 2	GROUP 4
LANGUAGE AND LITERATURE.	MATHEMATICS.	HISTORY AND SOCIAL SCIENCE.
2 Reading	4 Arithmetic	2 Geography
2 Writing	2 <i>Arithmetic, advanced</i>	2 <i>General history</i>
2 Spelling	4 Algebra	1 Greek history
2 English, elem.	2 <i>Algebra, advanced</i>	1 Roman history
2 English, advanced	3 Plane geometry	2 English history
2 English comp.	1 Solid geometry	2 U. S. history
2 Rhetoric	1 Plane trigonometry	2 <i>New York history</i>
2 English literature		2 Civics
2 <i>American literature</i>	GROUP 3	2 Economics
2 English reading	SCIENCE	
4 German, 1st year	<i>Physical</i>	GROUP 5
4 <i>German, 2d year</i>		OTHER STUDIES.
4 <i>German, 3d year</i>	2 Astronomy	
4 French, 1st year	2 Physics	
4 <i>French, 2d year</i>	2 <i>Physics, advanced</i>	2 <i>Psychology</i>
4 <i>French, 3d year</i>	2 Chemistry	1 Ethics
4 Latin, 1st year	3 <i>Chemistry, advanced</i>	2 <i>Stenography, 50</i>
2 Cæsar's Com.	<i>Geologic</i>	1 <i>Stenography, 75</i>
1 <i>Sallust's Catiline</i>		1 <i>Stenography, 100</i>
3 Cicero's Orations	2 Geology	} words per minute
1 <i>Ovid's Metamorph.</i>	2 Phys. geography	2 Bookkeeping
2 Virgil's <i>Æneid</i>		
1 <i>Virgil's Eclogues</i>	<i>Biologic</i>	<i>Form-Study and Drawing.</i>
1 Latin comp.		
4 Greek, 1st year	2 Botany	
2 Xenophon's <i>Anab.</i>	2 Zoölogy	2 Drawing
2 Homer's <i>Iliad</i>	2 Phys. and Hygiene	2 <i>Drawing, advanced</i>
1 Greek comp.		

For further information as to the Regents' fifty-count certificate, or as to the time or place when the examinations are held by the Regents, address the Regents of the University of the State of New York, Examinations Department, Albany, N. Y.

Information as to the examinations for admission to the Freshman Class of the School of Arts of Columbia College can be had by applying to the Registrar of the School of Law.

of having qualified at least one year prior thereto; if entering the Third-year class, to produce evidence of having qualified two years prior thereto.

Every applicant for advanced standing must pass satisfactory examinations in the work of the First year to be admitted to the Second year, and in the work of the First year and in fourteen hours of the Second year to be admitted to the Third year. No certificate or diploma will be accepted in lieu of these examinations for advanced standing.

Special Students

Applicants who are not candidates for a degree are admitted without a preliminary examination, and may, subject to the approval of the Dean, pursue such courses of study as they elect. Such students will be classified as special students.

Special students must present themselves for examination in each subject selected by them at the first examination held therein, and must pass satisfactory examinations in a majority of the subjects, as a condition of continuing in the school.

Examinations

Written examinations will be held at the end of each year on the subjects of that year.

No student will be admitted to advanced standing who has failed to pass a satisfactory examination in any of his studies. Any student failing in the final examination held at the end of the academic year, may present himself for examination a second time during the last week of the summer vacation. The names of students failing to be admitted to advanced standing will be enrolled as of the class from which they have failed to be advanced. Such students may, however, pursue the studies of the advanced class, provided they have not been conditioned in more than four hours of work, and on passing satisfactory examinations at the end of the year in the studies of the advanced class, and also in the subjects in which they have been deficient, will be readmitted to the class from which they have been dropped. No student failing a third term in any given subject will be allowed to continue in the school.

No special examinations are given.

For further information address the Dean of the School of Law, Columbia College.

Admission to the Bar

Under the rules of the Court of Appeals, applicants for admission to the New York Bar must serve a clerkship of three years. Any portion of time not exceeding two years, spent in regular attendance upon the lectures of this school, is accepted in lieu of an equal period of clerkship.

In New Jersey eighteen months spent in this school is regarded as the equivalent for a like period of clerkship in a lawyer's office.

Copies of the rules regulating admission to the New York Bar can be had on application to the Registrar of the School of Law.

REGISTER OF STUDENTS

POST-GRADUATE

NAME	RESIDENCE	CITY ADDRESS
Ralph Wesley Hyatt, LL.B. (C.)	<i>Newark, N. J.</i>	(793 High st.)

THIRD YEAR

Edwin Galloway Adams	<i>Montclair, N. J.</i>	(27 Hillside ave.)
Alfred John Amend	<i>New York City</i>	1650 Avenue "A."
DeWitt Bailey, A.B. (P.I.); A.M. (C.)	<i>Brooklyn, N. Y.</i>	(102 Wilson st.)
David Bandler, A.B. (C.)	<i>New York City</i>	212 Edgecombe ave.
Robert Chetwood Beatty	<i>New York City</i>	3 East 9th st.
Cortlandt Field Bishop, A.M., Ph.D. (C.)	<i>New York City</i>	13 Madison ave.
Charles Adrian Brodek, B.S. (C. C.); A.M. (C.)	<i>New York City</i>	112 East 81st st.
Malcolm John Cameron, A.B. (J. H.)	<i>New York City</i>	493 Lexington ave.
William Carl, A.B. (C.C.); A.M. (C.)	<i>New York City</i>	247 West 133d st.
Harry Jansen Crawford	<i>New York City</i>	252 West 73d st.
Frank Ayer Dillingham, A.B. (Y.)	<i>New York City</i>	322 West 88th st.
Charles Nelson Dohs	<i>New York City</i>	361 Lexington ave.
Edward Darwin Edson, B.S. (O. C.)	<i>Duluth, Minn.</i>	491 Lexington ave.
Alex. L. Figge	<i>Brooklyn, N. Y.</i>	(859 President st.)
Mortimer Kennedy Flagg	<i>New York City</i>	22 West 85th st.
Herschel Luther Gardner, A.B. (C.)	<i>New York City</i>	118 East 45th st.
Edward L. Godfrey, A.B. (S. X.)	<i>New York City</i>	216 East 46th st.
George Tarleton Goldthwaite, A.B. (H. U.)	<i>New York City</i>	25 East 24th st.
Lawrence George Goodhart	<i>New York City</i>	1148 Park ave.
Alexander Browne Halliday, A.B. (H. U.); A.M. (C.)	<i>Yonkers, N. Y.</i>	
Theodore Hansen, A.B. (C.)	<i>New York City</i>	346 West 57th st.
Eugene H. Healey, A.B. (D. C.)	<i>Detroit, Mich.</i>	157 Hudson st.
Reuben A. Heller	<i>Newark, N. J.</i>	(236 Elwood ave.)
Herman A. Heydt, Ph.B. (S. X.)	<i>New York City</i>	221 West 43d st.
John Sprunt Hill, Ph.B. (U. N. C.)	<i>New York City</i>	320 West 58th st.
Benjamin J. Jarrett	<i>Pittsburgh, Pa.</i>	26 East 47th st.
Sherman Skinner Jewett, 2d, A.B. (Y.); A.M. (C.)	<i>Buffalo, N. Y.</i>	22 East 47th st.
Max Josephs	<i>Brooklyn, N. Y.</i>	(231 Bergen st.)

NAME	RESIDENCE	CITY ADDRESS
Dudley Kinsell	<i>San Leandro, Cal.</i>	207 West 56th st.
C. Frank Kireker, Jr.	<i>Paterson, N. J.</i>	
Benjamin F. Kraft	<i>New York City</i>	45 East 74th st.
Richard Krause	<i>East New York</i>	(Norwood ave. bet. Fulton and Ridgewood aves.)
Joseph Larocque, Jr., A.M. (C.)	<i>New York City</i>	126 East 34th st.
Harry Learned	<i>New York City</i>	204 West 133d st.
James Parrish Lee, A.B. (H. U.)	<i>New York City</i>	79 Madison ave.
John Baldwin McGrew	<i>Springfield, O.</i>	74 West 92d st.
Charles Capron Marsh, A.B. (Y.)	<i>Rahway, N. J.</i>	"The Rockingham," Broadway and 56th st.
Frederick Wallace Mattocks	<i>Cleveland, O.</i>	Spuyten Duyvil, N. Y.
S. Stanwood Menken, B.L. (C. U.)	<i>New York City</i>	771 West End ave.
Edward Calvin Moën, A.B. (H. U.)	<i>New York City</i>	308 West 77th st.
Hart Momsen	<i>St. Paul, Minn.</i>	365 Lexington ave.
Henry Necarsulmer, B.S. (C. C.); A.M. (C.)	<i>New York City</i>	109 East 70th st.
Henry James Nichols, A.B. (G.)	<i>Brooklyn, N. Y.</i>	(277 Adelphi st.)
George P. Norton	<i>Dover, N. H.</i>	142 East 48th st.
Benjamin Oppenheim	<i>New York City</i>	116 East 84th st.
Louis Oppenheim	<i>New York City</i>	116 East 84th st.
James Alfred Parker, A.B. (H. U.)	<i>New York City</i>	102 West 58th st.
Terry Parker	<i>Atchison, Kans.</i>	64 West 49th st.
Edward T. Paul	<i>Brooklyn, N. Y.</i>	(172 Remsen st.)
Waldron Kintzing Post, A.B. (H. U.)	<i>Bayport, L. I.</i>	21 Washington sq.
Edward Ormonde Power	<i>New York City</i>	114 West 126th st.
Edward Stephen Rawson, A.B. (H. U.)	<i>Cincinnati, O.</i>	58 West 57th st.
Benjamin Reass	<i>New York City</i>	21 Ave. "B."
Harry Raymond Richards	<i>Dover, N. J.</i>	524 Fifth ave.
Allan Gold Robinson, A.B. (Y.)	<i>Scranton, Pa.</i>	41 West 25th st.
Alfred L. Ross	<i>Florence, Mass.</i>	361 Lexington ave.
Maurice Sichel	<i>New York City</i>	166 West 80th st.
Harold Eldridge Spencer	<i>Tarrytown, N. Y.</i>	
Solomon Marcuse Stroock, B.S. (C. C.); A.M. (C.)	<i>New York City</i>	156 East 80th st.
Henry Richmond Taylor, A.B. (C.)	<i>New York City</i>	121 East 21st st.
Robert Van Iderstine	<i>Brooklyn, N. Y.</i>	(164 Lafayette ave.)
Harold Garrison Villard, A.B. (H. U.)	<i>New York City</i>	175 West 58th st.
William Bell Wait, Jr.	<i>New York City</i>	412 Ninth av.
John Metcalfe Ward	<i>New York City</i>	45 William st.
Muir Weissinger	<i>Louisville, Ky.</i>	72 West 48th st.
William Burtis Welde	<i>New York City</i>	77 East 124th st.
Henry Wendt	<i>New York City</i>	238 East 62d st.
Grenville Bayard Winthrop, A.B. (H. U.); A.M. (C.)	<i>New York City</i>	170 West 59th st.
August Zinsser, Jr., A.B. (C.)	<i>New York City</i>	501 West 58th st.

Third-Year Class.....69

SECOND YEAR

NAME	RESIDENCE	CITY ADDRESS
Henry S. Acken	<i>Haworth, N. J.</i>	
Edward Albert Alexander, B.S. (C. C.)	<i>New York City</i>	147 East 62d st.
William Frederick Back	<i>Brooklyn, N. Y.</i>	(487 North 2d st.)
James Dixon R. Baldwin, A.B. (H. U.)	<i>New York City</i>	17 East 35th st.
Stansbury V. Barnum	<i>Chappaqua, N. Y.</i>	
Max Jacob Bernheim, A.B. (C.)	<i>New York City</i>	111 East 78th st.
Herman Bowsky	<i>New York City</i>	254 East 49th st.
Charles C. Brainerd, A.B. (C.)	<i>Brooklyn, N. Y.</i>	(487 Greene ave.)
Conrad Braker	<i>Brooklyn, N. Y.</i>	(607 Eleventh st.)
Alanson Tuthill Briggs, A.B. (C.)	<i>New York City</i>	120 West 93d st.
Edward Stelle Brownson, Jr., A.M. (C.)	<i>Brooklyn, N. Y.</i>	(49 Garden pl.)
Joseph Edmond Bullen, A.B. (Br.)	<i>Newton Centre, Mass.</i>	151 West 45th st.
Ferdinand Ezra M. Bullowa, A.B. (C. C.); A.M. (C.)	<i>New York City</i>	46 East 66th st.
Nathan Platt Bushnell	<i>Montrose, N. Y.</i>	
James Dickson Carr, A.B. (R.)	<i>New York City</i>	495 Sixth ave.
Pember S. Castleman	<i>Riverside, Cal.</i>	109 West 47th st.
Thomas Ayres Church, A.B. (M. C. O.)	<i>New York City</i>	42 West 33d st.
Alfred Arthur Cook, B.S. (C.C.)	<i>New York City</i>	152 East 71st st.
Louis Frederick Dodd	<i>New York City</i>	11 West 122d st.
Torrey Everett, A.B. (H. U.)	<i>Council Bluffs, Iowa</i>	11 East 46th st.
Lewis Herbert Freedman, A.B. (C. C.)	<i>New York City</i>	120 West 125th st.
John Henry Hammond, Ph.B. (Y.)	<i>St. Paul, Minn.</i>	29 East 28th st.
Sydney Wesley Hart	<i>Hoboken, N. J.</i>	(232 Washington st.)
Emanuel Hertz, A.B. (C. C.)	<i>New York City</i>	449 East 80th st.
Eugene Baker Hoffman	<i>Bozeman, Mont.</i>	675 Lexington ave.
Christian Glaser Hüpfel	<i>New York City</i>	148 East 37th st.
Edwin Sumner Hunt, A.B. (A.)	<i>Charlestown, N. H.</i>	68 West 49th st.
Edward Hymes, A.B. (C.)	<i>Newark, N. J.</i>	(43 Clinton st.)
Norman Gildersleeve Johnson, A.B. (C.)	<i>New York City</i>	480 Mott ave.
Matthew T. Johnston, A.B. (S. J. M.)	<i>Easton, Md.</i>	25 East 46th st.
Frederick Winston Keasbey, A.B. (C.)	<i>Newark, N. J.</i>	(Stratford pl.)
Frederick Keffer Kelham, A.B. (H. U.)	<i>New York City</i>	121 West 95th st.
William C. B. Kemp	<i>New York City, Hotel</i>	"New Netherlands."
William Nettleton Kennedy, A.B. (K.)	<i>Rushville, Ind.</i>	1695 Broadway
Norman William Kerngood	<i>Baltimore, Md.</i>	72 West 49th st.
Arthur Knox, A.B. (C. C.)	<i>New York City</i>	472 Mott ave.
Ulysses Grant Marks, B.S. (W.C.)	<i>Zeller, Pa.</i>	410 Lexington ave.
Robert Valentine Mathews	<i>Brooklyn, N. Y.</i>	(222 Schermerhorn st.)
Charles King Morrison, A.B. (H. U.)	<i>New York City</i>	691 Fifth ave.
Frederick W. Mount	<i>Jersey City, N. J.</i>	(202 Harrison ave.)
Thomas E. Munday	<i>New York City</i>	205 East 46th st.
Timothy Joseph Murray, A.B. (S. J.); A.M. (S. X.)	<i>New York City</i>	55 East 75th st.
Walter S. Newhouse, A.B. (C.)	<i>New York City</i>	46 West 73d st.

NAME	RESIDENCE	CITY ADDRESS
Isaac Charles O'Connor	<i>Brooklyn, N. Y.</i>	(350 Prospect pl.)
Raymond Otis, A.B. (R. U.)	<i>Rochester, N. Y.</i>	6 East 47th st.
Nathan Ottinger, B.S. (C. C.)	<i>New York City</i>	110 East 61st st.
Samuel Pakelnishky	<i>Syracuse, N. Y.</i>	127 East 60th st.
Milton Cornelius Palmer, B.S. (C. U.)	<i>Sing Sing, N. Y.</i>	
William B. Parsons, A.B. (C. N. J.)	<i>New York City</i>	226 West 59th st.
Edward Pfeffer	<i>New York City</i>	421 St. Nicholas ave.
Raymond Reubenstein, A.B. (C. C.)	<i>New York City</i>	57 East Broadway
Lester R. Riggs	<i>Salt Lake City, Utah</i>	144 East 34th st.
George Rosendale	<i>New York City</i>	123 East 114th St.
Joseph Thomas Ryan	<i>New York City</i>	311 West 50th st.
James Murray Sanderson	<i>Newark, N. J.</i>	(584 High st.)
Charles Stiger Skinner	<i>Brooklyn, N. Y.</i>	(93 Lafayette ave.)
James Bennett Southard	<i>Cold Spring, N. Y.</i>	
Augustus C. Stevens	<i>Syracuse, N. Y.</i>	37 West 39th st.
Louis Stürcke	<i>New York City</i>	423 East 84th st.
Algernon Thomas Sweeney, B.S. (M. A. C.)	<i>Newark, N. J.</i>	(15 Orleans st.)
Russell Lord Tarbox, A.B. (W.)	<i>Batavia, N. Y.</i>	30 East 126th st.
Thomas Walsh, Ph.B. (G.)	<i>Brooklyn, N. Y.</i>	(114 First pl.)
Roy Fallette York	<i>Cleveland, O.</i>	"Windsor Hotel."
Second-Year Class.....		63

FIRST YEAR

Berkeley Clarence Austin, A.B. (C. C.)	<i>Cranford, N. J.</i>	
Shelley Fowler Austin	<i>Cranford, N. J.</i>	
William Thomas Aycock, A.B. (U.S.C.)	<i>Wedgefield, S. C.</i>	618 Lexington ave.
Benjamin Charles Bachrach, A.B. (N. D.)	<i>Chicago, Ill.</i>	120 East 85th st.
Henry Burr Barnes, Jr., A.B. (Y.)	<i>New York City</i>	5 East 44th st.
Solomon Charles Bernstein, B.S. (C. C.)	<i>New York City</i>	138 Henry st.
Charles Seth Boardman	<i>New York City</i>	102 East 57th st.
Alfred Wreaks Booraem	<i>Brooklyn, N. Y.</i>	48 West 82d st.
Ward Brower	<i>New York City</i>	Riverside Drive, 109th st.
Herbert Spencer Brussel	<i>New York City</i>	10 East 81st st.
John Francis Carew, A.B. (C.)	<i>New York City</i>	225 East 58th st.
Thomas Ives Chatfield, A.B. (Y.)	<i>New York City</i>	173 Fifth ave.
Paul Clagstone, A.B. (H. U.)	<i>New York City</i>	"The Aurelia," 30th st. and Fifth ave.
Solomon Cohn, A.B. (C.C.)	<i>New York City</i>	44 Bowery
Joseph Jacob Corn	<i>New York City</i>	23 East 128th st.
Sidney Clinton Crane	<i>Plainfield, N. J.</i>	(315 East 2d st.)
William Beers Crowell	<i>New York City</i>	1044 Fifth ave.
Lee Sumner Day	<i>Elyria, O.</i>	64 West 49th st.
Henry Temple Dodge	<i>New York City</i>	209 West 118th st.
John Hugh Doherty	<i>Kansas City, Mo.</i>	68 West 49th st.
Eugene Joseph Donnelly	<i>Brooklyn, N. Y.</i>	(111 North 2d st.)

NAME	RESIDENCE	CITY ADDRESS
Archibald Douglas	<i>Tarrytown, N. Y.</i>	33 West 42d st.
William C. Dunbar	<i>Brooklyn, N. Y.</i>	(940 Pacific st.)
Horatio Seymour Eisman, A.B. (C.C.)	<i>New York City</i>	124 East 74th st.
Hermann George Friedmann, B.S. (C.C.)	<i>New York City</i>	922 East 138th st.
Joseph Whitney Ganson, A.B. (H.U.)	<i>New York City</i>	47 West 33d st.
Charles Henry George	<i>Orange, N. Y.</i>	(24 Reynolds Terrace)
Horace Mordecai Graff, A.B. (C.C.)	<i>New York City</i>	40 West 83d st.
Wells Hamilton	<i>Brooklyn, N. Y.</i>	(435½ Classon ave.)
Harry Mason Hewitt	<i>New York City</i>	12 East 30th st.
Charles Whitman Hills, C.E. (U.C.)	<i>Manchester, N. H.</i>	Montclair, N. J.
Walter Baylis Hopping	<i>Hanover, N. Y.</i>	
Harold Hurd	<i>Dorchester, Mass.</i>	137 West 47th st.
Robert Selden Huse	<i>Highland Falls, N. Y.</i>	8 West 34th st.
Edwin James Johnson	<i>Richfield Spa, N. Y.</i>	920 Eighth ave.
Franklin Johnson, Jr.	<i>Chicago, Ill.</i>	128 East 52d st.
Edward Renshaw Jones, A.B. (H.U.)	<i>New York City</i>	20 North Washington sq.
Francis Corey Keyes, A.B. (G.)	<i>San Francisco, Cal.</i>	40 East 51st st.
Harvey Roberts Kingsley, A.B. (C.)	<i>Rutland, Vt.</i>	588 Fifth ave.
Arthur Charles Klettsch, A.B. (C.)	<i>Milwaukee, Wis.</i>	34 East 60th st.
William R. A. Koehl	<i>New York City</i>	137 East 50th st.
Edgar Julius Kohler, A.B. (C.C.)	<i>New York City</i>	115 East 71st st.
Henry M. Levin, B.S. (C.C.)	<i>New York City</i>	317 East 79th st.
Louis Levy, A.B. (C.C.)	<i>New York City</i>	119 East 122d st.
Edward Livingston, Jr., A.B. (H.U.)	<i>New York City</i>	17 East 74th st.
Charles Edward Francis McCann	<i>New York City</i>	Hotel Lincoln
Cornelius Patrick McIntyre, A.B. (S.H.)	<i>Montgomery, Ala.</i>	113 East 24th st.
Samuel Manson	<i>Syracuse, N. Y.</i>	63 East 110th st.
Robert Mickle Miles, Jr., A.B. (Se.H.)	<i>South Orange, N. Y.</i>	16 and 18 Exchange pl.
John Hill Morgan, A.B. (Y.)	<i>Brooklyn, N. Y.</i>	(7 Pierrepont st.)
Louis Nesbit	<i>New York City</i>	58 West 39th st.
Morton Cotton Nichols, A.B. (H.U.)	<i>New York City</i>	35 Broad st.
Adam Gordon Norrie, A.B. (C.)	<i>New York City</i>	377 Fifth ave.
Sheridan Shook Norton, A.B. (S.X.)	<i>New York City</i>	161 West 71st st.
James F. O'Beirne, A.B. (S.X.)	<i>New York City</i>	201 East 20th st.
Charles Rogers Pelgram	<i>New York City</i>	31 West 91st st.
Edward Anson Prentice	<i>Portage, N. Y.</i>	12 East 47th st.
Harold Sturges Rankine, A.B. (H.C.)	<i>Geneva, N. Y.</i>	"The Benedict," 80 Washington sq.
George Ross	<i>New York City</i>	128 West 132d st.
Frederick H. Sanborn, A.B. (P.I.)	<i>Brooklyn, N. Y.</i>	(13 Spencer pl.)
Jacob Schattman, Jr.	<i>New York City</i>	14 East 126th st.
Joseph Martin Schenck	<i>Binghamton, N. Y.</i>	136 East 61st st.
George J. Schleicher	<i>Cuero, Tex.</i>	623 Lexington ave.
Peter Schmuck, B.S. (C.C.)	<i>New York City</i>	323 West 39th st.
Edward Samuel Seidman, A.B. (B.C.)	<i>New York City</i>	649½ Lexington ave.

NAME	RESIDENCE	CITY ADDRESS
Oliver Wadworth Shead, A.B. (H.U.)	<i>Eastport, Me.</i>	63 West 48th st.
Harry George Smith	<i>New York City</i>	924 Third ave.
Francis Raymond Stark, A.B. (S.X.)	<i>New York City</i>	Madison Avenue Hotel
George Edwin Starr	<i>San Francisco, Cal.</i>	313 West 45th st.
Jerome Herman Steinberger	<i>New York City</i>	153 East 61st st.
William Law Stout	<i>Jersey City, N. J.</i>	(14 Virginia ave.)
Robert William Thompson, Jr., A.B. (C.C.)	<i>New York City</i>	229 West 97th st.
Trevelyan Townsend	<i>Baltimore, Md.</i>	"Hotel Buckingham"
Edward Le Clerc Vogt, Jr.	<i>Morristown, N. J.</i>	
Sampson Herbert Weinhandler, A.B. (C.C.)	<i>New York City</i>	319 East 17th st.
Ernest Ingersol White, B.L. (C.U.)	<i>Syracuse, N. Y.</i>	50 West 48th st.
Lewis Morris White	<i>Binghamton, N. Y.</i>	321 East 42d st.
Samuel Lee Wolff, A.B. (H.U.)	<i>New York City</i>	125 East 73d st.
Charles Fraprie Wood	<i>Brooklyn, N. Y.</i>	(85 Wilson st.)
First-Year Class.....		79

SPECIAL STUDENTS

Harry Montague Apfelbaum	<i>Gloversville, N. Y.</i>	493 Lexington av.
Allan Campbell Bakewell	<i>Pittsburgh, Pa.</i>	Buckingham Hotel
John Milton Boone	<i>St. Clair, Pa.</i>	Tarrytown, N. Y.
Henry Worthington Bull	<i>Irrington, N. Y.</i>	
Thomas Morrison Carnegie	<i>Pittsburgh, Pa.</i>	Imperial Hotel
Robert Catlin, A.B. (U.O.)	<i>Portland, Or.</i>	204 East 30th st.
David Thomas Davies, LL.B. (U. Cin.)	<i>Elmwood Place, O.</i>	498 Manhattan ave.
John Campbell Dorland	<i>Utica, N. Y.</i>	Yonkers, 148 N. B'way
Hamilton Hill Durand, A.B. (Y.)	<i>New York City</i>	359 Lexington ave.
Frank Wright Duryea	<i>Glen Cove, L. I.</i>	
Sydney Edgar Eads	<i>Paris, Ill.</i>	Grand Union Hotel
Edward Oliver Gorden	<i>Cleveland, O.</i>	650 Madison ave.
Alexander I. Hahn	<i>New York City</i>	383 8th st.
Joseph Marc Harris	<i>New York City</i>	111 East 71st st.
Lee Hills	<i>New York City</i>	138 Madison ave.
Renwick Clifton Hurry	<i>New York City</i>	30 West 17th st.
Herbert Seymour Husted	<i>Brooklyn, N. Y.</i>	(127 Remsen st.)
William Henry Irvine	<i>Salt Lake City, Utah</i>	Buckingham Hotel
Pearsall Bradhurst Jackson	<i>New York City</i>	308 Madison ave.
Frederic Kohlmeier	<i>Town of Union, N. J.</i>	(146 Palisade ave.)
Leonidas Moreau Lawson, Jr.	<i>New York City</i>	15 East 67th st.
James Elder Leech	<i>New York City</i>	422 West End ave.
George Washington MacAdam Jr.	<i>New York City</i>	131 West 122 st.
George D. Mackay, Jr.	<i>Jersey City, N. J.</i>	(110 Oak st.)
Walter Willis Morse	<i>New York City</i>	3 East 19th st.
Frederick Secor Mullen	<i>Stapleton, S. I.</i>	(26 Harrison st.)
George Frederick Parsons	<i>New York City</i>	429 West 57th st.
Henry Evelyn Pierrepont, Jr.	<i>Brooklyn, N. Y.</i>	(216 Columbia Hts.)

NAME	RESIDENCE	CITY ADDRESS
Lathrop Randolph	<i>New York City</i>	Mt. St. Vincent
Edward Elliot Swadener	<i>Dayton, O.</i>	138 West 42d st.
George Ogden Thomas	<i>Topeka, Kan.</i>	63 West 50th st.
Edward D. Tittmann, L.L.B. (Col.U.)	<i>New York City</i>	175 West 58th st.
Francis Nathaniel Trevor	<i>Detroit, Mich.</i>	232 West 49th st.
Inglis Moore Uppercu	<i>New York City</i>	119 Nassau st.
Herman James Wagner	<i>Nyack, N. Y.</i>	22 William st.
Special Students.....		35

SENIORS, SCHOOL OF ARTS

David D. Ackerman	<i>Paterson, N. J.</i>	(274 Hamilton ave.)
Paul Armitage	<i>Bay Shore, L. I.</i>	295 Church st.
Russell Ely Burke	<i>New York City</i>	17 East 55th st.
George Stanislaus Connell	<i>New York City</i>	154 West 87th st.
Harold Coburn Cook	<i>Flushing, N. Y.</i>	
Eugene Howell Daly	<i>New York City</i>	2050 Madison ave.
Alexander White Doolittle	<i>Waterville, N. Y.</i>	258 West 55th st.
Harold S. Emerson	<i>Brooklyn, N. Y.</i>	(125 Gates ave.)
Joseph Peter Grace	<i>New York City</i>	31 East 79th st.
Otto Theodore Hess	<i>New York City</i>	307 West 86th st.
Philip R. M. Hildreth	<i>New York City</i>	48 Irving pl.
Jamas C. Howell	<i>Highland Mills, N. Y.</i>	
David Stewart Iglehart	<i>New York City</i>	106 East 86th st.
Campbell Erie Locke	<i>New York City</i>	23 West 53d st.
Frederick Felix Neuman	<i>New York City</i>	604 Lexington ave.
Carlloss Hinckley Oliver	<i>Burlington, Vt.</i>	313 West 50th st.
Oscar Roland Seitz	<i>New York City</i>	1186 Lexington ave.
Henry Merwin Shrady	<i>New York City</i>	8 East 66th st.
Henry Ayres Uterhart	<i>New York City</i>	552 East 85th st.
Frederic De Witt Wells	<i>New York City</i>	Hotel Waldorf
Senior in the School of Arts.....		20

SCHOOL OF PHILOSOPHY

Royce Knowlton Ingalls	<i>Foliet, Ill.</i>	64 East 49th st.
Student, registered primarily in the School of Philosophy.....		1

UNIVERSITY FELLOWS

Harwood Huntington, A.B. (T.)	<i>New York City</i>	76th st. and E. R.
James Alexander McLean, A.B. (U.T) A.M. (C.)	<i>Mayfair, Canada</i>	
		595 Lexington ave.
University Fellows.....		2

PARENTAGE OF COLLEGE DEGREES

ABBREVIATIONS		GRADUATES
A.	Amherst College	1
B.C.	Buchtel College, O.	1
Br.	Brown University	1
C.	Columbia College	20
C.C.	College of the City of New York	24
C.N.J.	College of New Jersey	1
Col. U.	Columbian University, Washington, D. C.	1
C. U.	Cornell University	3
D.C.	Detroit College	1
G.	Georgetown College	3
H.C.	Hobart College	1
H. U.	Harvard University	20
J. H.	Johns Hopkins University	1
K.	Kenyon College	1
M.A.C.	Michigan Agricultural College	1
M.C.O.	Marietta College	1
N.D.	Notre Dame Univ., Ill.	1
O.C.	Olivet College	1
P. I.	Polytechnic Institute, Brooklyn	2
R.	Rutgers College	1
R. U.	University of Rochester	1
Se. H.	Seton Hall College	1
S. H.	Spring Hill College	1
S. J.	St. John's College, New York	1
S. J. M.	St. John's College, Md.	1
S. X.	St. Francis Xavier's College, N. Y.	5
T.	Trinity College, Ct.	1
U. C.	Union College	1
U. Cin.	University of Cincinnati, O.	1
U. N. C.	University of North Carolina	1
U. O.	University of Oregon	1
U. S. C.	University of South Carolina	1
U. T.	University of Toronto	1
W.	Williams College	1
W. C.	Westminster College, Pa.	1
Y.	Yale University	9

36 Colleges and Universities. Total graduates 114

SUMMARY

Post-Graduate Students.....	1
Third-Year Class.....	69
Second-Year Class.....	63
First-Year Class.....	79
Special Students	35
Seniors in the School of Arts.....	20
Students from the School of Philosophy.....	1
University Fellows.....	2

Total..... 270

SCHOOL OF MEDICINE

COLLEGE OF PHYSICIANS AND SURGEONS

The instruction in medicine is given under the following departments :

ANATOMY	OBSTETRICS
CHEMISTRY AND PHYSICS	OPHTHALMOLOGY
DISEASES OF CHILDREN	OTOLOGY
DERMATOLOGY	PATHOLOGY
GYNECOLOGY	PHYSIOLOGY
LARYNGOLOGY	PRACTICE OF MEDICINE
MATERIA MEDICA AND	SURGERY
THERAPEUTICS	VENEREAL DISEASES
NEUROLOGY	

Officers of the Faculty

JAMES W. McLANE, M.D.....	<i>Dean and ex-officio Member of the University Council</i>
GEORGE M. TUTTLE, M.D.....	<i>Secretary</i>
GEORGE L. PEABODY, M.D.....	<i>Elected Delegate to the University Council</i>
E. B. CRAGIN, M.D.....	<i>Asst. Secretary</i>

Faculty

SETH LOW, LL.D., *President*

JAMES W. McLANE, M.D.,	<i>Professor of Obstetrics</i>
CHARLES F. CHANDLER, Ph.D.,	<i>Professor of Chemistry and Medical Juris- prudence</i>
FRANCIS DELAFIELD, M.D.,	<i>Professor of the Practice of Medicine</i>
JOHN G. CURTIS, M.D.,	<i>Professor of Physiology</i>
GEORGE M. TUTTLE, M.D.,	<i>Professor of Gynecology</i>
GEORGE L. PEABODY, M.D.,	<i>Professor of Materia Medica and Therapeutics</i>
WILLIAM T. BULL, M.D.,	<i>Professor of Surgery</i>
M. ALLEN STARR, M.D.,	<i>Professor of Diseases of the Mind and Nervous System</i>
GEORGE S. HUNTINGTON, M.D.,	<i>Professor of Anatomy</i>
R. F. WEIR, M.D.,	<i>Professor of Surgery</i>
T. MITCHELL PRUDDEN, M.D.,	<i>Professor of Pathology, Director of the Lab- oratories of Histology, Pathology, and Bacteriology</i>
NOTE : For other instructors see departmental statements.	

ANNOUNCEMENT FOR 1893-94

Beginning with the academic year 1894-95, the studies in Medicine leading to the degree of Doctor of Medicine will constitute a required four years' course. All necessary particulars in relation to the course will be given in detail in future publications.

The College of Physicians and Surgeons, on July 1, 1891, became, under the authority of the Legislature, a part of Columbia College. This merger, which makes the medical department in a complete sense an integral part of the university system, largely increases the usefulness of the medical school, favors the thoroughness of scientific medical education, and promotes scientific research. The accessions to the teaching force, notably in the department of anatomy, and in the physiological, pathological, and chemical laboratories, permit the realization, to a degree hitherto quite impossible, of the great opportunities for instruction and research afforded by the excellence of the dissecting rooms, the laboratories, and apparatus.

The college occupies a group of buildings, given by the late William H. Vanderbilt and his family, and by William D. Sloane, Esq., which stand upon thirty contiguous lots of land, bounded on the south, west, and north by Fifty-ninth Street, Tenth Avenue, and Sixtieth Street, respectively, and lying immediately opposite to the Roosevelt Hospital.

The station, which is a few steps from the college, at the corner of Fifty-ninth Street and Ninth Avenue, is the point of union of the Ninth Avenue and Sixth Avenue Elevated Railroads, by either of which the buildings are immediately accessible from the north and south.

The "across-town" horse-cars of the Surface Railway lines move east and west along Fifty-ninth Street, pass the site of the college, and place it in easy communication with the Second and Third Avenue Elevated roads, and with the numerous lines of horse-cars which reach Fifty-ninth Street from the north and south. All important points in the city, including the various hospitals, can thus readily be reached from the college without a walk of any length.

The buildings appertaining to the college are three in number :

THE COLLEGE BUILDING PROPER ;
THE VANDERBILT CLINIC ;
THE SLOANE MATERNITY HOSPITAL.

THE COLLEGE BUILDING PROPER has been designed to facilitate that combination of didactic instruction with laboratory work which is essential to a modern scientific training. It consists of a *southern portion*, measuring 140 feet by 43 feet, extending along Fifty-ninth Street ; of a *northern portion*, 96 by 43 feet, extending along Sixtieth Street ; and of a *middle portion*, 96 feet by 55 feet, connecting the other two. The total area covered is therefore 15,428 feet. Each story above the basement of the northern and southern portions has been built "in the clear," and contains neither brick partitions nor iron columns. It is therefore possible to remodel the interior at any future time.

Vanderbilt Clinic

THE VANDERBILT CLINIC is upon the land given to the college at the corner of Sixtieth Street and Tenth Avenue, and is connected with the college building proper by a covered way.

This institution, which has been built and endowed by the sons of the late William H. Vanderbilt as a memorial of their father, provides a fully equipped dispensary service for the sick poor; and for the college, whose professors have entire charge of its practice, a field for extended and practical clinical instruction and research in all branches.

Besides its *dispensary department*, the building contains numerous *small rooms*, for the direct practical teaching of diagnosis and treatment to groups of learners; a so-called "scope-room" where a number of students at once can be instructed in the use of the ophthalmoscope, the laryngoscope, and the like; and a *theatre*, for clinical lectures, which accommodates an audience of nearly four hundred. During the year 1892, 121,471 patients were treated at this institution, of which 35,657 were new patients.

Sloane Maternity Hospital

THE SLOANE MATERNITY HOSPITAL is upon the college land at the corner of Fifty-ninth Street and Tenth Avenue.

This is a lying-in hospital given by William D. Sloane, Esq., whose wife, a daughter of the late William H. Vanderbilt, has endowed the institution by making all of its beds free in perpetuity.

The obstetric service here is under the exclusive direction of the professor of midwifery at the college, the instructor in obstetrics being the resident physician.

For further details and for the practical instruction at this hospital, see "Obstetrics" page 80.

CURRICULUM

N. B.—For the establishment of a required four years' course beginning October 1, 1894, see page 168.

The work required of the students at this college who are candidates for the degree of M.D. is distributed over three years of study, according to the curriculum set forth below.

Obligatory Exercises of the Regular Curriculum

N. B.—Certificates that all the required practical work has been performed in a manner satisfactory to the instructors in charge must be presented prior to final examination.

First Year

Didactic Lectures or Demonstrations in: 1, Anatomy, see page 14. 2, Physiology, see page 98. 3, Physics and Chemistry, see page 26.

Practical Work in: 1, Dissection, see page 15. 2, Normal Histology, see page 89. 3, Physiological and Medical Chemistry, see page 29.

Second Year

Didactic Lectures or Demonstrations in : 1, Anatomy, see page 14. 2, Physiology. 3, Physics and Chemistry. 4, Materia Medica and Therapeutics, including Hygiene, see page 66. 5, Practice of Medicine, including the Diseases of the Mind and Nervous System, see pages 80 and 99. 6, Principles and Practice of Surgery, see page 105. 7, Obstetrics and Gynecology, see pages 56 and 80.

Dissection, see page 15.

Clinics at the Vanderbilt Clinic in : 1, General Medicine, see page 100. 2, General Surgery, see page 105.

Practical Clinical Work in : 1, General Medicine, see page 100. 2, General Surgery, see page 105.

Third Year

Didactic Lectures or Demonstrations in : Materia Medica and Therapeutics, including Hygiene. 2, Pathology, see page 89. 3, Practice of Medicine, including Diseases of the Mind and Nervous System. 4, Principles and Practice of Surgery. 5, Obstetrics and Gynecology.

Clinics at the Vanderbilt Clinic in : 1, Diseases of the Mind and Nervous System, see page 80. 2, Gynecology, see page 56. 3, Diseases of Children, see page 33. 4, Venereal Diseases, see page 106. 5, Diseases of the Skin, see page 33. 6, Diseases of the Throat, see page 60. 7, Diseases of the Eye, see page 81. 8, Diseases of the Ear, see page 88.

Practical Work in Pathology and Pathological Histology, see page 89.

Practical Clinical Work in Obstetrics, see page 81.

N.B.—In the eight subjects enumerated above under the head of “clinics” practical clinical work may be pursued during the third year as an optional study without extra charge.

INSTRUCTION

The teaching at this college comprises didactic and clinical lectures and demonstrations ; practical clinical instruction given to groups of students ; and laboratory work.

Lectures and Demonstrations

For details see the several departments.

Didactic lectures and demonstrations, including those in which the magic lantern is used, are given throughout the college year on the following subjects, viz. : 1, *Anatomy*. 2, *Physiology*. 3, *Physics and Chemistry*. 4, *Materia Medica, Therapeutics, and Hygiene*. 5, *Obstetrics and the Diseases of Women*. 6, *Surgery*. 7, *Pathology*. 8, *Practice of Medicine, including the Diseases of the Mind and Nervous System*.

CARTWRIGHT LECTURES OF THE ALUMNI ASSOCIATION.—According to the provisions of the Cartwright Trust, there is biennially given, under the auspices of the Alumni Association, a course of lectures more especially addressed to graduates in medicine. This course was delivered during the session of 1891—

92, by HENRY F. OSBORN, SC.D., Da Costa Professor of Biology in Columbia College, upon *Present Problems of Evolution and Heredity*.

Clinics

Eleven clinics are given each week at the Vanderbilt Clinic, as follows :

Surgical—Professors BULL and WEIR ; Mondays, 12 M.

Diseases of the Ear—Professor BUCK ; Clinical Instruction to Sections ; Mondays, 2 P.M.

Diseases of the Skin—Professor FOX ; Mondays, 3 P.M.

Diseases of the Throat and Nose (with laryngoscopic and rhinoscopic demonstrations)—Professor LEFFERTS ; Tuesdays, 2 P.M.

Diseases of the Eye—Professor KNAPP ; Tuesdays, 3 P.M.

Diseases of Children—Professor JACOBI ; Wednesdays, 2:30 P.M.

Venereal Diseases—Professor TAYLOR ; Thursdays, 2 P.M.

Medical—Professor DELAFIELD ; Thursdays, 3 P.M.

Diseases of the Mind and Nervous System—Professor STARR ; Fridays, 2 P.M.

Diseases of Women—Professor TUTTLE ; Fridays, 3 P.M.

Hospital Clinics

See the several departments. For appointments to the house-staffs of the hospitals, see page 174.

Besides the college clinics, the general and special hospitals of New York afford most important fields for clinical teaching. This college is strongly represented on the staffs of these institutions, and regular clinical instruction at hospitals is made a prominent feature of the curriculum. *Admission is free* to all matriculated students. At all the following hospitals instruction is given by officers of the college.

SLOANE MATERNITY HOSPITAL, corner of Fifty-ninth Street and Tenth Avenue.—See pages 81 and 169.

ROOSEVELT HOSPITAL—This has long been the seat of thorough clinical work, and has become of special importance in this respect from its position immediately opposite the new buildings of the College of Physicians and Surgeons upon Fifty-ninth Street, between Ninth and Tenth Avenues. Moreover, this hospital, a few years ago, received a bequest of several hundred thousand dollars for the erection and endowment of THE SYMS OPERATING THEATRE, which now offers unrivalled facilities for instruction in operative surgery.

THE McLANE OPERATING THEATRE is used for operative gynecology by Professor Tuttle exclusively. See page 57.

The Roosevelt is a general hospital of one hundred and eighty beds, and it also possesses a flourishing out-patient department.

Public clinics are given here as follows, throughout the college session :

Medical—Mondays at 4 P.M., Professors DELAFIELD and DRAPER and Dr. ROOSEVELT.

Surgical—Saturdays, at 2:30 P.M., Professor MCBURNEY.

Gynecological—Tuesday, Thursday, and Saturday, at 2:30 P.M., Professor TUTTLE. Admission, by invitation, to operations.

NEW YORK HOSPITAL, Fifteenth Street, between Fifth and Sixth Avenues—Reached from the medical college by taking the Sixth Avenue Elevated Railroad at the corner of Ninth Avenue and Fifty-ninth Street, and leaving the cars at the corner of Fourteenth Street and Sixth Avenue ; or by the surface cars.

This is a general hospital of the highest class, of one hundred and fifty beds, with an out-patient department.

The public clinics are the :

Medical—Mondays and Thursdays, at 2:30 P.M., from November to March ; Professors DRAPER and PEABODY.

Surgical—Thursdays, at 3 P.M., February to June, Dr. HARTLEY ; Wednesdays, 2:30 P.M., February to June, Professor WEIR ; Saturdays, 2:30 P.M., Professors WEIR and BULL.

BELLEVUE HOSPITAL, Twenty-sixth Street and East River—Directly accessible from the college by the horse-cars of the Belt Line, which run from the door of the college to that of the hospital ; or, by leaving the horse-car at the corner of Fifty-ninth Street and Third Avenue, and taking the Third Avenue Elevated train to the corner of Third Avenue and Twenty-eighth Street.

This hospital has eight hundred beds and receives sixteen thousand patients annually, of whom one fourth are in the exclusive charge of officers of this college.

The service of the out-patient department also covers a great range of practice ; and two newly built operating theatres, a large and a smaller one, are in full use.

The following clinics are held here during the session :

Medical—Tuesday, 1:30 P.M., Professor JACOBI, and Drs. ROOSEVELT and JAMES.

Surgical—Thursdays, 2:30 P.M., Drs. F. H. MARKOE and GALLAUDET.

Diseases of Children—Mondays, 2:30 P.M., from April to June, Professor JACOBI.

Veneral and Genito-Urinary—Tuesdays, 2 P.M., Professor TAYLOR.

ST. LUKE'S HOSPITAL, Fifth Avenue and Fifty-fourth Street.

Surgical—Dr. F. H. MARKOE gives a clinic to which students are admitted, on Fridays, at 2:30 P.M., from August to February ; and Dr. B. F. CURTIS, Thursdays, 2:30 P.M., from October to January.

CITY HOSPITAL, formerly CHARITY HOSPITAL, Blackwell's Island, East River—To reach this institution the steamer should be taken at the foot of East Fifty-second Street. This hospital offers a peculiarly rich field for the study of venereal diseases, over two thousand such cases being received yearly. Dr. HAYDEN gives a clinic from October to March, inclusive, as follows :

Veneral—Wednesdays, 2 P.M., from October 1 to January 1.

NEW YORK CANCER HOSPITAL, One Hundred and Sixth Street and Eighth Avenue.—Elevated Railroad station, One Hundred and Fourth Street and Ninth Avenue. It can be reached also by the Eighth Avenue surface road.

One clinic a week is held here, viz. :

Surgical—From February to May. Thursdays, 2:30 P.M. Dr. B. F. CURTIS.

NEW YORK OPHTHALMIC AND AURAL INSTITUTE, 46 East Twelfth Street

—Reached by the Sixth Avenue Elevated train, which should be left at the Fourteenth Street station, or by the surface cars.

This hospital has thirty beds, and a large daily dispensary service is held for diseases of the eye and ear. Throughout the session the following clinic is held :

Ophthalmological—(Admission by invitation of Sections.) Selected cases for diagnosis ; the most important operations on the eye. Saturdays, 2:30 to 5 P.M. Professor KNAPP.

Practical Clinical Instruction

See the several departments.

One of the greatest advantages secured to the college by the founding of the Sloane Maternity Hospital and the Vanderbilt Clinic is the possibility of organizing a system of practical clinical teaching whereby each member of numerous small classes may be brought into direct personal contact with the cases under examination.

An outline is appended of the instruction proposed upon this plan, which is given by the clinical lecturers and their assistants.

GENERAL MEDICINE—Physical diagnosis.

Required.

GENERAL SURGERY—Diagnosis and treatment, including minor surgery, and bandaging.

Required.

MIDWIFERY—Attendance upon cases of labor, at the Sloane Maternity Hospital, by advanced students, under the direction of the obstetricians of the hospital (see page 81).

Required.

GYNECOLOGY—Practical instruction in diagnosis and treatment, including the use of instruments.

Optional.

DISEASES OF CHILDREN—Diagnosis and treatment.

Optional.

VENEREAL DISEASES—Diagnosis and treatment.

Optional.

DISEASES OF THE NERVOUS SYSTEM—Examination of cases, including electrical tests ; diagnosis and localization of lesions ; electro-therapeutics.

Optional.

DISEASES OF THE SKIN—Diagnosis and treatment.

Optional.

DISEASES OF THE EYE—Diagnosis, including the tests for errors of refraction and accommodation and the use of the ophthalmoscope, and treatment.

Optional.

DISEASES OF THE EAR—Diagnosis and treatment.

Optional.

DISEASES OF THE THROAT AND NOSE—Use of the laryngoscope and rhinoscope. Exercises on the laryngoscopic phantom. Examination of cases. Diagnosis of ordinary affections of the throat and nose.

Optional.

Hospital Appointments

By a resolution of the Commissioners of Public Charities and Correction, the faculty of this college is entitled to nominate for appointment by the commissioners, after competitive examination in the college, its proportion of members of the house staff of Bellevue Hospital; such members to be attached to that division of the said hospital which has been assigned to the care of the college.

Four nominations, two medical and two surgical, are made each year by the college from among its graduates under the above resolution.

One medical and one surgical assistant go on duty upon July 1st; in the same way one medical and one surgical assistant upon January 1st.

The choice as to character of service, and the time of beginning the same, is given to the successful candidates in the order of their merit.

The surgical nominees all serve the hospital for six months in each of the four grades of ambulance surgeon, junior assistant, senior assistant, and house surgeon; each one having thus a total of two years' experience on the "House Staff." The medical nominees serve each in the three grades of junior assistant, senior assistant, and house physician.

Similar positions are filled twice in each year, by public competitive examinations, open to graduates of this college, in the following institutions:

The "non-collegiate" division of Bellevue Hospital; the New York Hospital; the Roosevelt Hospital; St. Luke's Hospital; the City Hospital; St. Vincent's Hospital; St. Francis's Hospital; the German Hospital; the Mount Sinai Hospital; the Presbyterian Hospital; the Woman's Hospital; the Brooklyn Hospital; St. Catherine's Hospital, Brooklyn; St. Peter's Hospital, Brooklyn; the King's County Hospital, Flatbush, L. I.

Laboratory Work

For the required and optional courses at the various laboratories, and for research therein, see the following departments:

Anatomy, including Animal Morphology, page 14; Chemistry (Course XXVIII), pages 26 and 29; Pathology, including Normal Histology, Pathologic Anatomy, and Histology, Bacteriology, Microscopic Technology, and Photomicrography, page 89; Physiology, page 98; Surgery, for Operative Surgery on the cadaver, page 105.

Demonstrations of Pathological Anatomy

The autopsies which occur at the Roosevelt, New York, Bellevue, and Charity Hospitals during the session, take place before the students usually

at regular hours, and the hospital pathologists demonstrate and explain the lesions discovered. Whenever autopsies are to occur at these institutions, timely notice is posted upon the bulletin-board of the college.

The hours for autopsies are as follows :

ROOSEVELT HOSPITAL—3 P.M., Dr. HODENPYL

NEW YORK HOSPITAL—2 P.M.

BELLEVUE HOSPITAL—I P.M., Dr. ELY

CHARITY HOSPITAL—Thursdays and Saturdays, Dr. VAN GIESON

Alonzo Clark Scholarship

See table of contents.

Fellowships

For the University Fellowships, see table of contents.

For the Alumni Association Fellowships, see table of contents.

Prizes

For the Harsen Prizes for clinical reports, see table of contents.

For the Harsen Prizes for proficiency at examination, see table of contents.

For the Alumni Association Prize, see table of contents.

For the Cartwright Prize, see table of contents.

For the Stevens Triennial Prize, see table of contents.

For the Joseph Mather Smith Prize, see table of contents.

Text-Books and Instruments

The following list comprises the text-books and instruments recommended. The text-books are *for reference only*, unless otherwise specified in the notices of the several departments.

For the convenience of those who wish to reckon up their expenses in advance, there are appended the lowest prices at which the books, in cloth bindings, can be purchased in New York. These prices are liable to fluctuations. As a rule, the latest editions only of text-books should be purchased.

Gray's Anatomy, \$4.80 ; *or* Quain's Anatomy, new edition not yet completed ; Foster's Physiology, \$3.60 ; Fownes's Chemistry, \$2.20 ; Ganot's Physics, \$4 ; Pellew's Medical and Physiological Chemistry, \$2 ; H. C. Wood's Therapeutics, \$4.80 ; E. Curtis's General Medicinal Technology, 80 cents ; Hare's Practical Therapeutics, \$3 ; Senn's Principles of Surgery, \$4.50 ; Treves's Manual of Surgery, \$4.80 ; American Text-Book of Surgery, \$7 ; Playfair's Midwifery, \$3.20 ; *or* Lusk's Midwifery, \$4 ; August Martin's Diseases of Women, \$3.20 ; *or* Hart and Barbour's Manual of Gynecology, \$5.60 ; Pepper, American Text-Book of Medicine, \$10 ; Delafield and Prudden's Pathological Anatomy and Histology, \$4.80 ; Prudden's Normal Histology, \$1 ; Ashby and Wright on the Diseases of Children, \$4.00 ; Bumstead and Taylor on Venereal Diseases ; Dr. Schweinitz, Diseases of the Eye \$4.00 ; Buck's Manual of

Diseases of the Ear, \$2; Jackson's Handbook of Skin Diseases, \$2.20; Bosworth, Diseases of the Nose and Throat, \$9.60; Gowers's Diseases of the Nervous System, 1st vol. \$2.80; Dana, Text-Book of Nervous Diseases, \$2.60; Kirchoff, Handbook of Insanity, \$2.20.

A "dissecting case," containing all the necessary instruments, can be bought for from \$3.00 to \$4.00.

Expenses

See table of contents.

Admission

1. Applicants for matriculation who declare themselves in writing not to be candidates for the degree of Doctor in Medicine from this college are admitted, without further formality, to matriculation as special students. Such applicants cannot subsequently become candidates for graduation at this college without full compliance with the terms of admission and graduation as set forth in this catalogue.

2. To all persons who matriculate with the intention of becoming candidates for the degree of Doctor in Medicine, *at any medical school in the State of New York*, the following provisions of law are now applicable, viz.:

LAWS OF NEW YORK, 1893, CHAPTER 661, § 145 (IN PART).

"The degree of Bachelor or Doctor of Medicine shall not be conferred in this State before the candidate has filed with the institution conferring it, the certificate of the regents that *three years before the date of the degree, or before or during his first year of medical study in this State*, he had either graduated from a registered college or satisfactorily completed not less than a three years' academic course in a registered academy or high school; or had a preliminary education considered and accepted by the regents as fully equivalent; or had passed regents' examinations in arithmetic, elementary English, geography, spelling, United States history, English composition, and physics. Students who had matriculated in a New York medical school before June 5, 1890, shall be exempt from this preliminary education requirement, provided the degree be conferred before August 1, 1895."

Every person to whom this law applies, must, in pursuance thereof, before he can be admitted to final examination for the degree of M.D., file with the Secretary of the Faculty a MEDICAL STUDENT'S CERTIFICATE OF THE REGENTS OF THE UNIVERSITY OF THE STATE OF NEW YORK.

The conditions to be fulfilled in order to obtain this certificate are as follows:

A—Certificates without Examination

Candidates for a medical student's certificate having credentials which can be accepted in place of an examination under the act, must send their credentials to "UNIVERSITY EXAMINATIONS DEPARTMENT, ALBANY, N. Y." They will be examined and returned at once, and, if accepted, a medical student's certificate will be sent with them. If the certificate be delayed for verification of the candidate, when issued, it will be dated from receipt of the candidate's application, so that the candidate will lose no time.

EXAMINATIONS IN


PLACES

TIMES

TIMES	PLACES	Group 1, Language		Group 2, Mathematics	Group 3, Science	Group 4, History and Social Science Group 5, Other Studies
		Modern	Ancient			
SEPTEMBER, 1893—The last Tuesday, Wednesday, and Thursday <i>i. e.</i> , 26-28	New York, Brooklyn, Albany, Syracuse, Buffalo. For law and medical students only	Spelling English, " elementary composition		Arithmetic Physics		Geography English history United States history
NOVEMBER—Monday, Tuesday, and Wednesday of Thanksgiving week <i>i. e.</i> , 20-22	New York and about 200 academies and high schools	Reading Writing Spelling English, " elementary composition " literature	Cesar's Comment.	Arithmetic Algebra Plane geometry Physics Physical geography Physiology and hygiene		Geography English history United States history Civics Economics Book-keeping Drawing
JANUARY, 1894—20th week from second Monday in September <i>i. e.</i> , 22-26	New York and about 160 academies and high schools	<div> <div>January and March</div> <div> Reading Writing Spelling English, " elementary composition " literature Course in Eng. read'g German, 1st year French, 1st year </div> </div>	Latin, 1st year Cesar's Comment. Cicero's Orations Virgil's <i>Aeneid</i> Latin comp. Greek, 1st year Xenophon's <i>Anab.</i> Homer's <i>Iliad</i> Greek comp.	Arithmetic Algebra Plane geometry Solid geometry Plane trigonometry Astronomy Physics Chemistry Geology Physical Geography Botany Zoölogy Physiology and hygiene		Geography Greek history Roman history English history United States history Civics Economics Ethics Book-keeping Drawing
MARCH — Week beginning second Monday <i>i. e.</i> , 12-16	New York and about 160 academies and high schools					
JUNE — 40th week from second Monday in September <i>i. e.</i> , 11-15	New York and about 320 academies and high schools	Same as in January and March, and English, advanced Rhetoric American literature German, 2d year " 3d year French, 2d year " 3d year	Sallust's <i>Catiline</i> Ovid's <i>Metamorph.</i> Virgil's <i>Eclogues</i>	Arithmetic, advanced Algebra, advanced Physics, advanced Chemistry, advanced		General history Psychology Drawing, advanced

The credentials, beside those referred to in the law, which the Regents accept in place of an examination under the act, may be ascertained by written application addressed to "UNIVERSITY EXAMINATIONS DEPARTMENT, ALBANY, N. Y."

B—Examinations under the Act

 *N. B.—Candidates should notify the Regents' office at Albany at least ten days in advance, stating at what time and in what studies they must be examined. They will at once be assigned the most convenient time and place.*

Any person who does not obtain a medical student's certificate without examination, according to section A, must pass the examinations named in the law, or their equivalents, as allowed by the regents, and referred to under section A.

The times, places, and subjects of these examinations are set forth below. *On the dates specified, examinations are held entirely under the charge of the regents.*

Graduation

For candidates for the degree of M.D. the requirements for graduation are as follows, viz :

1. A. Candidates who are not already graduates in medicine of recognized institutions must have pursued the regular three years' curriculum at this college ; or the regular curriculum of the second and third years at this college, and such a course at some other medical school as shall have been recognized by the faculty as an equivalent for the first year's curriculum at this college.

No course at another medical school will be so recognized which shall have begun during the same calendar year as that in which the student who shall have attended it shall have entered this college.

B. Graduates in medicine of recognized institutions must have pursued at this college at least the regular curriculum of the third year.

2. All candidates, whether already graduates in medicine or not, must pass at this college examinations satisfactory to the Faculty in: 1, Anatomy ; 2, Physiology ; 3, Physics and Chemistry ; 4, Materia Medica and Therapeutics, including Hygiene ; 5, the Practice of Medicine, including the Diseases of the Mind and Nervous System ; 6, Principles and Practice of Surgery ; 7, Obstetrics and Gynecology ; 8, Clinical Studies ; 9, Normal Histology, Pathology, and Bacteriology.

See section headed "EXAMINATIONS."

3. Candidates must present satisfactory evidence of good moral character and of having attained the age of twenty-one years.

4. Candidates must present satisfactory evidence of having complied with the requirements for admission.

See section headed "ADMISSION," page 176.

See also section headed "LICENSE TO PRACTISE MEDICINE," page 180.

Examinations

The professional examinations are practical and in writing, and are held immediately after the close of the lectures of the college year.

The examinations in the topic of "Clinical Studies" comprise one question in each of the following subjects, set by the clinical professor thereof :

1, Venereal Diseases ; 2, Diseases of Children ; 3, Diseases of the Eye ; 4, Diseases of the Ear ; 5, Diseases of the Throat ; 6, Diseases of the Skin.

With the exception of such graduates in medicine as attend at this college only the third year of the curriculum, candidates, if they so elect, are eligible for examination in any or all of the three branches of : 1, Anatomy ; 2, Physiology ; and 3, Physics and Chemistry, and upon these only, on completing the first two years of the curriculum.

The following new rules to govern examinations have been adopted by the faculty, to take effect in May, 1894, viz. :

1. The system of giving to students "examination numbers" is abolished, and hereafter each candidate will be examined and voted upon by name.

2. In addition to the eight subjects upon which examinations are now held, there will be a ninth, and this will include an examination upon all the work required in the laboratories that are under the direction of Professor PRUDEN. This examination will be conducted by him and his assistants.

3. The maximum mark will be ten instead of eight, as at present.

4. No student will be allowed to pass in any subject unless he shall have received a mark of at least six.

5. No student will be compelled to be examined a second time upon any subject if he shall have received a mark of six at any examination upon that subject.

6. If any student fail to attain a mark of six in any department, he will be declared conditioned in that department.

7. Conditioned candidates will not be allowed more than two subsequent examinations in the subjects upon which they have been conditioned ; and at each of these examinations they will be examined in all of the subjects in which they have been conditioned.

8. Candidates conditioned at the spring examination may present themselves for re-examination in October. If again conditioned, they may come up for their final examination in the following spring, at the regular college examination. If they fail at this time to receive a mark of six in any subject, they will not be subsequently re-examined.

9. Candidates who fail to present themselves for re-examination at one or the other of the two times just specified, succeeding their original condition, will be deemed to have waived their right to re-examination ; and no student will be allowed to postpone for more than one year the examinations upon conditioned subjects.

10. Students must pass a satisfactory examination in every subject before they are recommended for the degree of Doctor in Medicine.

11. In determining the examination mark the professors of Anatomy, Chemistry, Practice of Medicine, Surgery, and Obstetrics will give due weight to the practical work of the student in their several departments.

12. If any student, presenting himself for examination the first time, fails to pass in three or more subjects, he will be considered as *rejected*, and will not be permitted to be re-examined until the following spring. Rejected students may be examined twice, at the discretion of the Faculty, but not a third time.

Board

Information in regard to board can be obtained from the Secretary of the "Students' Movement," through the Registrar, Mr. E. T. Boag, at his office in the college. Prices range from \$5 to \$9 per week.

Correspondence

Letters requesting information should be addressed to George M. Tuttle, M.D., Secretary of the Faculty, College of Physicians and Surgeons, 437 West Fifty-ninth Street, New York.

License to Practise Medicine

The following extracts from the act regulating the practice of medicine in the State of New York are printed for the information of such graduates and students as may intend to practise medicine in this State :

Laws of New York, 1893, ch. 661

Previous laws relating to the practice of medicine were repealed May 9, 1893, when this new law took effect.

§ 141 STATE BOARDS OF MEDICAL EXAMINERS—There shall continue to be three separate state boards of medical examiners of seven members each, each of whom shall hold office for three years from August 1 of the year in which appointed. One board shall represent the Medical Society of the State of New York, one the Homœopathic Medical Society of the State of New York, and one the Eclectic Medical Society of the State of New York. Each of these three societies shall at each annual meeting nominate twice the number of examiners to be appointed in that year on the board representing it. The names of such nominees shall be annually transmitted under seal by the president and secretary prior to May 1 to the regents, who shall, prior to August 1, appoint from such lists the examiners required to fill any vacancies that will occur from expiration of term on August 1.

§ 145 ADMISSION TO EXAMINATION—The regents shall admit to examination any candidate who pays a fee of \$25.00 and submits satisfactory evidence, verified by oath if required, that he :

(1) Is more than twenty-one years of age ; (2) is of good moral character ; (3) has the general education required in all cases after August 1, 1895, preliminary to receiving the degree of Bachelor or Doctor of Medicine in this state¹ ; (4) has studied medicine not less than three full years, including three satisfactory courses, in three different academic years, in a medical school registered as maintaining at the time a satisfactory standard ; (5) has either received the degree of Bachelor or Doctor of Medicine from some registered medical school, or a diploma or license conferring full right to practise medicine in some foreign country.

¹ See ADMISSION, page 176.

The regents may in their discretion accept as the equivalent for any part of the third or fourth requirement, evidence of five or more years' reputable practise of medicine, provided that such substitution be specified in the license.

§ 146 QUESTIONS—Each board shall submit to the regents, as required, lists of suitable questions for thorough examination in anatomy, physiology and hygiene, chemistry, surgery, obstetrics, pathology and diagnosis, and therapeutics including practice and materia medica. From these lists the regents shall prepare question papers for all these subjects, which at any examination shall be the same for all candidates, except that in therapeutics practice and materia medica all the questions submitted to any candidate shall be chosen from those prepared by the board selected by that candidate, and shall be in harmony with the tenets of that school as determined by its state board of medical examiners.

§ 147 EXAMINATIONS AND REPORTS—Examinations for license shall be given in at least four convenient places in this state and at least four times annually, in accordance with the regents' rules, and shall be exclusively in writing and in English. Each examination shall be conducted by a regents' examiner, who shall not be one of the medical examiners. At the close of each examination the regents' examiner in charge shall deliver the question and answer papers to the board selected by each candidate, or to its duly authorized committee, and such board, without unnecessary delay, shall examine and mark the answers and transmit to the regents an official report, signed by its president and secretary, stating the standing of each candidate in each branch, his general average, and whether the board recommends that a license be granted. Such report shall include the questions and answers and shall be filed in the public records of the University. If a candidate fails on first examination, he may, after not less than six months' further study, have a second examination without fee.

If the failure is from illness or other cause satisfactory to the regents, they may waive the required six months' study.

§ 148 LICENSES—On receiving from a state board an official report that an applicant has successfully passed the examinations and is recommended for license, the regents shall issue to him, if in their judgment he is duly qualified therefor, a license to practise medicine. Every license shall be issued by the University under seal, and shall be signed by each acting medical examiner of the board selected, and by the officer of the University who approved the credential which admitted the candidate to examination, and shall state that the licensee has given satisfactory evidence of fitness as to age, character, preliminary and medical education, and all other matters required by law, and that after full examination he has been found properly qualified to practice. Applicants examined and licensed by other state examining boards registered by the regents as maintaining standards not lower than those provided by this article, and applicants who matriculated in a New York state medical school before June 5, 1890, and who received the degree of M.D. from a registered medical school

before August 1, 1895, may, without further examination, on payment of \$10 to the regents and on submitting such evidence as they may require, receive from them an indorsement of their licenses or diplomas conferring all rights and privileges of a regents' license issued after examination.

§ 149 REGISTRY—Every license to practise medicine shall, before the licensee begins practice thereunder, be registered in a book kept in the clerk's office of the county where such practice is to be carried on, with name, residence, place and date of birth, and source, number, and date of his license to practise. Before registering each licensee shall file, to be kept in a bound volume in the county clerk's office, an affidavit of the above facts, and also that he is the person named in such license, and had, before receiving the same, complied with all requisites as to attendance, terms, and amount of study and examinations required by law and the rules of the University as preliminary to the conferment thereof; that no money was paid for such license, except the regular fees paid by all applicants therefor; that no fraud, misrepresentations, or mistake in any material regard was employed by any one or occurred in order that such license should be conferred. Every license, or if lost, a copy thereof legally certified so as to be admissible as evidence, or a duly attested transcript of the record of its conferment shall, before registering, be exhibited to the county clerk, who, only in case it was issued or indorsed as a license under seal by the regents, shall indorse or stamp on it the date and his name preceded by the words: "Registered as authority to practise medicine, in the clerk's office of . . . county." The clerk shall thereupon give to every physician so registered a transcript of the entries in the register with a certificate under seal that he has filed the prescribed affidavit. The licensee shall pay to the county clerk a total fee of one dollar for registration, affidavit, and certificate.

REGISTER OF STUDENTS

NAME	RESIDENCE
Burr Reeve Abbe, Jr., A.B.....	Connecticut
Isador Abrahamson, B.S.....	New York City
Harold Stuart Acheson.....	New York City
Leon Jesse Adams.....	Massachusetts
Walter Sawyer Adams.....	Massachusetts
William Adler.....	New York City
Ysidoro Agostini, Jr.....	Cuba
Edward Gurdon Aldrich.....	Connecticut
Archibald Fowler Alexander.....	New Jersey
Isaac Alkus.....	Brooklyn, N. Y.
Maxwell H. Allen... ..	Texas
Horace Russell Allen, Jr., A.B.....	Indiana
John Frank Waite Allen.....	New York City
Emil Altman	New York City
Francisco Alvarado.....	New York City
Raul Amador.....	Rep. of Colombia
George Anderson.....	New York City
Lewis Nostrand Anderson.....	Brooklyn, N. Y.
Alfred James Andrews	Brooklyn, N. Y.
Samuel Ansbacher, B.S.....	New York City
John Aquario.....	New York City
William Henry Areson.....	New Jersey
David Fitch Armstrong, A.B.....	New York
John Asselta.....	New York City
Thomas Hanlon Atkinson, A.B.....	New Jersey
Alonzo Eugene Austin.....	New York City
Oliver Luther Austin	New York
James Cook Ayer.....	New York City
Joseph Walter Babcock	New York City
Frederick Randolph Bailey, A.B.....	New Jersey
William Hayden Baker.....	New York
Samuel Harbourne Baldwin, A.B.....	New Jersey
Samuel Wyllis Bandler, A.B.....	New York City
Charles Everett Banker, A.B.....	New York City
George Wheelock Banning.....	New York City

NAME	RESIDENCE
Archibald Henry Barkley.....	Kentucky
John Hendley Barnhart, A.M.....	New York
Thomas William Barrett.....	Oregon
Charles Bartow, A.B.....	New York
Herman Benjamin Baruch, B.S.....	New York City
Arthur Loring Beals, A.B.....	Massachusetts
Wright Butler Bean.....	Canada
Alfred Bell.....	Brooklyn, N. Y.
Harry Leach Bender.....	New York City
Harry Raymond Bennett.....	Connecticut
Charles Sweetser Benson.....	Maine
Charles Sylvester Bentley.....	New York City
Frederick Leslie Benton.....	Brooklyn, N. Y.
Albert Ashton Berg, A.B.....	New York City
Charles White Berry.....	New York
Horace Bigelow, A.B.....	New York
Arthur Walter Bingham, B.S.....	Wisconsin
James Bishop, Jr., A.B.....	New York City
Albert George Bising, A.B.....	New Jersey
Edward Blaise.....	Brooklyn, N. Y.
Pedro Celso Blanco-Gutierrez.....	Costa Rica, C. A.
Simon Risefield Blatteis.....	Brooklyn, N. Y.
Frederick Bleil, A.B.....	New York City
Ernest Mason Bliss, A.B.....	Massachusetts
Jesse Leonti Bliss.....	Massachusetts
John Henri Blot.....	New York City
Edward Augustus Blonnt, Jr.....	Texas
Henry Julius Blumensohn, B.S.....	New York City
Charles Ridgeway Blundell, B. S.....	New Jersey
Alphonse Michael Bodden, A.B.....	Wisconsin
Louis Albert Sayre Bodine.....	New Jersey
Martin Laurence Bodkin.....	Brooklyn, N.Y.
Walter Edward Boetzkes.....	New York
Belmont de Forest Bogart.....	New York
Solomon Bokshitzky.....	New York City
Rev. James William Bonham, M.D.....	New York City
Clarence Hornbeck Bonnell, A.B.....	New York
Adolph Bonner.....	New York City
Junius Brutus Booth.....	New York City
Charles Hurbert Borden.....	New Jersey
John Gerard Louis Borgmeyer, B.S.....	New Jersey
Joseph Wilbur Bourland, A.B.....	Texas
Gail Glen Bowman.....	Pennsylvania
Leon Bowman.....	New York City
Franklin Fleetwood Bowyer.....	New York City
John Newton Boyce.....	New York

NAME	RESIDENCE
James Van Wagner Boyd	New York City
William Augustus Boyd, Jr.	New York City
Charles Edward Boynton	Georgia
Harry Merritt Bradley, B. S.	Iowa
William Little Bradley, A.B.	New York
Charles Lewis Adrien Brasseur.	New York City
Arthur Richard Bräunlich, Ph.G.	Brooklyn, N. Y.
Mordecai Robert Bren.	New York City
James Henry Brennan.	New York
Everett Clifton Brennand.	Massachusetts
Marks Bresler.	New York City
Walter M. Brickner, B.S.	New York City
Augustus Homer Brown, A.M.	New York City
Edward Wells Brown.	Wisconsin
Elias Galley Brown, A.B.	New York City
Joseph Douglas Brown, Ph.B.	New York City
Barton Wilbur Brush, M.D.	New York
William Morgan Bryan.	New York
Samuel Adolph Buchenholz.	New York City
Clarence Whitfield Buckmaster.	New York
Frank Thomas Budd.	New York City
William Buermann.	New Jersey
William Edward Buist.	Tennessee
Thomas Everett Bullard.	New York
William Duff Bullard.	New York City
Clarence Perciville Bulson, Ph.G.	New York City
Charles Vincent Burke.	New Jersey
Edmund Burke.	New York City
Edward Michael Burns, B.S.	New York City
Edward Ward Burns.	Pennsylvania
Martin Francis Burns, A.B.	Massachusetts
Reed Burns, M.D.	Pennsylvania
Joseph Byrne, A.M.	Nebraska
John Andrew Calnane.	Maine
Frederick Charles Cameron.	New York
Henry Herries Cammann.	New York
James Edward Campbell, Ph.B.	New York City
Ransford De Los Canedy.	Massachusetts
John Alling Card.	New York
Joseph Carlucci.	New York City
Herbert Swift Carter, A.B.	New York City
James Peter Casazza, Ph.G.	New York City
Abram Caspe, B.Sc., A. M.	New York City
Douglas Aymar Cater, B.S.	New York City
Edwin Crosby Chamberlin.	New York
Theodore Chamberlin, A.B.	Massachusetts

NAME	RESIDENCE
George Fletcher Chandler.....	New York City
Robert Fendall Chapman, B.S.....	New York City
Thomas Weston Chester, A.B.....	New Jersey
Frank Malcolm Child.....	New Jersey
Albert King Chipp.....	New York City
Arthur Hutchins Cilley, A.B.....	New York City
Raymond Clark.....	New York City
John Rogers Clark.....	Maine
Henry Dingee Coe.....	New York City
Samuel Cochran, A.B.....	New Jersey
Wallace Warren Colby.....	Brooklyn, N. Y.
James Cantine Coles.....	New York
Howard Ogle Comegys.....	New York City
Seth Cook Comstock.....	Connecticut
James Bronson Conant, A.B.....	New York
John Timothy Connelly.....	New Jersey
Charles Frank Connor.....	Massachusetts
Finley Ransom Cook, A.B.....	New York City
Herbert Sutherland Cooley.....	New York
Daniel Ferry Costello.....	New York City
Isaac Laurence Coutant.....	New York
Samuel James Craig.....	Brooklyn, N. Y.
George Waldo Crary, M.D.....	New York City
Henry Maclean Crawford.....	New York City
George Mason Creevy, A.B.....	Brooklyn, N. Y.
Frank Elihu Crosier, A.B.....	Massachusetts
David Ryerson Crounse.....	New Jersey
Willis Hanford Crowe.....	Connecticut
Frederick Wallace Culler.....	Brooklyn, N. Y.
Edward Otis Cummings.....	New Jersey
Harold Hammond Cummings.....	New Jersey
Henry Mortimer Cunningham.....	British Columbia
Thomas Maltby Cunningham.....	British Columbia
Edwin Rue Curry.....	Kentucky
Arthur Ward Cutler.....	New York
Robert Morris Daley.....	New York
Nicholas Robert Dann, A.B.....	New York City
John McBane Davidson.....	New York City
William Joseph Leo Davis.....	New Jersey
Henderson Brooke Deady.....	Oregon
Charles Abnon de Lima.....	New York City
Edward Francis Denner, A.M.....	New York City
Robert Denniston, A.B.....	New York City
Pedro de Obarrio.....	New York City
William Edward de Salazar.....	New York City
William Lowther Des Portes.....	South Carolina

NAME	RESIDENCE
John Milton Dexter, Jr.	New York
Theodore Frelinghuysen DeWitt, M.D.	Minnesota
José Anastasis Diaz-Rodrigues, A.B.	Porto Rico
William Gordon Dice, A.B.	Ohio
Joseph Milton Dill	Illinois
Joseph Aloysius Dillon, B.S.	New York City
Nicholas Dobkin	New York City
Joseph Smith Dodd	New Jersey
Robert Metcalf Dodsworth	California
Francis Oswald Dorsey, A.B.	Indiana
James Stewart Doubleday, M.D.	New York City
Edmund LeRoy Dow, B.S.	New York
Mortimer Byron Downer	New York
William Augustus Downes	Texas
Franklin Chace Downing	New York
William F. Drake, M.D.	New York
Moses Duckman	New York City
William Lawrence Dudley, B.S.	New York City
William Willcox Dunn	Virginia
Walter Livingston Dunning	New Jersey
James Walter Dunphy	New York City
John Franklin Dunseith	New York City
Jay Harvey Durkee, A.B.	Florida
John Watson Durkee	Kentucky
Basil Hicks Dutcher, Ph.B.	New York City
George Thomas Dutcher	New York
John S. Easton, A.B.	Pennsylvania
William Gustave Eckstein	New York City
Ogden Matthias Edwards, Jr., B.S.	New Jersey
Edward Ehlers	Brooklyn, N. Y.
Philip Embury	New Jersey
Robert Emmet	New York City
Floyd Bonesteel Ennist	New York City
Charles Henry Enos, Jr.	New York City
Evan Morton Evans, B.S.	New Jersey
Samuel Morley Evans	New York City
Edgar Horace Farr, A.B.	Vermont
Joseph Whittlesey Fauntleroy, M.D.	Virginia
William Thorne Fearn	Brooklyn, N.Y.
Louis Julius Fehr	New Jersey
Burr Ferguson, A.B.	Alabama
Carlisle Franklin Ferrin, A.B.	Vermont
Nicholas Frederick Feury	New Jersey
Peter Conover Field, B.S.	New Jersey
Edward Bronson Finch, A.B.	Massachusetts
William Young Finch	New York

NAME	RESIDENCE
John Henry Fischer.....	Iowa
Karl Ferdinand Hermann Fischer.....	Brooklyn, N.Y.
Parnell Ellis Fisher, A.B.....	Rhode Island
Alston Fitts.....	Alabama
Paul Fitz-Gerald, A.B.....	New Jersey
Cornelius Dennis Fitzpatrick.....	Mexico
Peter Leo FitzSimons.....	New York City
Frederic Hoole Floy, A.B.....	New Jersey
Clyde Sinclair Ford, B.S.....	West Virginia
Howard Sinnickson Forman, B.S.....	New Jersey
Ernest Wallace Fowler.....	District of Columbia
Russell Story Fowler.....	Brooklyn, N.Y.
Samuel Wallace Fowler, Ph.G.....	Alabama
Robert Lachlison Fox, M.D.....	Georgia
Isaac Frankenstein.....	New York City
Joseph Anthony Frasier.....	Massachusetts
Robert Samuel Freedman.....	New York City
Eugene Herbert Fried.....	New York City
Maurice Friedman.....	New York City
Samuel Friedman.....	New York City
Andrew Suydam Fritts.....	New Jersey
Samuel Knapp Frost.....	New York
Richard Frothingham, M.D.....	New York City
William Francis Fuchs.....	Brooklyn, N. Y.
Joseph Edward Fuld, M.D.....	New York City
Herbert Edmond Gardinor.....	New Jersey
James Augustus Gardner.....	New York City
George Upfold Gates.....	New York
William Gauch, Jr.....	New Jersey
Ennis Ignatius Geraghty.....	New York City
Ernest Carson Gibney, A.B.....	New York City
Howard Lawrance Gill.....	New York City
James Patrick Gilligan.....	Pennsylvania
Alexander Francis Gillis, M.D.....	Pennsylvania
Henry Robert Gledhill, A.B.....	Illinois
James Patrick Glynn, A.M.....	Brooklyn, N. Y.
Henry Simpson Goddard, M.D.....	Washington
Ernest Goldbacher.....	New York City
Ralph Henry Goldberg.....	New York City
David Goldberger.....	New York City
Adolph Goldhammer, B.S.....	New York City
Sydney Ormond Goldman.....	Pennsylvania
Carl Goldmark.....	New York City
Ellis Leon Goodall.....	Vermont
Albert Goodman.....	Oregon
Abram Lincoln Goodman, Ph.G.....	New York City

NAME	RESIDENCE
Charles Augustus Goodrich, B.S.	Connecticut
Charles Howard Goodrich	Connecticut
Howard Jerome Goodrich	New York
William Munson Goodwin	Connecticut
Edward Johnston Gordon	New York
Carl Ernst Hermann Graeb	New York City
Edward Graver, M.D.	Pennsylvania
Johann Gerhard Wilhelm Greeff	New York
Charles William Green	New Hampshire
Clarence Albert Greenleaf	New York
Chauncey Boyd Griffiths, A.B.	New Jersey
Henry Michael Groehl, Ph.G.	New York City
Samuel Bates Grubbs, A.B.	Indiana
Sidney Haas	New York City
Charles Alfred Haffner, A.B.	New York City
Henry Ewing Hale, Jr., A.B.	New Jersey
Charles Edward Hall	Michigan
Dupree Meriwether Hall, A.B.	Tennessee
James Hall	New York City
Samuel Hampton Halley, A.B.	Kentucky
Joseph Cohen Halsband	New York City
David Joseph Hamburg, B.S.	New York City
George Tillinghast Hammond, Jr.	Brooklyn, N. Y.
John Henry Bray Hanify	New York City
James Hanke	New Jersey
Whitfield Harral	Texas
William Nelson Harrison	New York City
Hugh Macdougall Hart	New Jersey
Theodore Stuart Hart, A.M.	New York City
Eugene Howe Hartnett, B.S.	New Jersey
James Foster Hasbrouck	New York City
John Gael Hathaway	Massachusetts
Louis Hauswirth, B.S.	New York City
James Joseph Hawley	Connecticut
Edwin Pelton Hayward	Nebraska
Allen Hazen, A.B.	Vermont
George Philip Heard, A.B.	Alabama
Joseph Heimovitz	New York City
Edmund Taylor Henry	New Jersey
Joseph Henschel, A.B.	New York City
Frank Miller Herman	Utah
Alexander Morton Heron	New Jersey
Charles Herrman	New York City
William Leo Hetherington	New Jersey
Elias Pierre Hicks	New York
John Augustus Hill, Jr.	New York City

NAME	RESIDENCE
Albert Theodore Hinrichs.....	New Jersey
Philip Hanson Hiss, Jr.....	Maryland
John Sawyer Hitchcock, A.B., M.D.....	Massachusetts
William C. Hobdy.....	Kentucky
Fenimore Cooper Hoke.....	New York
Henry William Diedrich Holling... ..	New York City
Edwin Holmes, A.B.....	New York City
James Fred Holmes, A.B., A.M.....	New York City
Joseph Scripture Holroyd.....	Connecticut
John Horni, Ph.G.....	Brooklyn, N. Y.
Edward Franklin Horr, A.B.....	Connecticut
Charles Beardsley Horton.....	Pennsylvania
Charles James Howard.....	Rhode Island
Hampton Pierson Howell, A.B.....	New York
Charles Huber, Ph.G.....	New York City
Carl Adolph Huber.....	New York
Frederick William Huber.....	New York City
Gustavus Adolphus Humphreys.....	Arkansas
Edward Livingston Hunt, A.B.....	New York City
Elon Obed Huntington, B.S.....	Minnesota
Lee Maidment Hurd.....	New York
Augustus Alphonso Hussey, A.B.....	Maine
Robert Morton Hutton.....	New Jersey
David Jacob Hyman.....	Brooklyn, N. Y.
Eugene Robert Hynard, Ph.G.....	New York City
Clarence Edward Ide.....	Rhode Island
Owen Ambrose Igoe.....	New York
Robert Franklin Ives.....	New Jersey
Sherwood Bissell Ives, A.B.....	New York City
Theodore Israel Jacobus, B.S.....	New York City
James Ralph Jacoby, A.B.....	New York City
Charles Herman Jaeger.....	New York City
Frederick William James.....	New York
Theodore Caldwell Janeway, Ph.B.....	New York City
Schuyler Clinton Jaques... ..	Indiana
Seymour Tilford Jarecki.....	Colorado
Benjamin Yeager Jaudon.....	Missouri
David Stuart Dodge Jessup, A.B.....	New York City
José del Carmen Jiménez.....	Costa Rica
Pedro Jiménez Jiménez.....	Costa Rica
Charles H. Johnson.....	Kansas
Daniel Herbert Johnson.....	Ohio
Philip Edwards Johnson, A.B.....	New York
William Throckmorton Johnson, A.B.....	New Jersey
William Cameron Johnstone.....	New York City
Oliver Hazard Jones, M.D.....	Indiana

NAME	RESIDENCE
Luther Cromwell Jones, M.D.	New York City
William Mudd Jordan	Alabama
Charles Samuel Josephs	New York City
Joseph Chaim Josephson, A.B.	New York City
Homer Thrall Joy, A.B.	New Jersey
Edgar Collins Joyce	New York City
Aspinwall Judd	New York City
Julius Jungmann	New York City
Paul Kahn	New York City
Wulf Kahn	New York City
William Lawrence Kantor	New York City
Morris Karash	New Jersey
Ernest Kaufman	New York City
James Edward Keegan	New Jersey
Henry Chrysostom Keenan, A.B.	Brooklyn, N. Y.
Frederick Conrad Keller	New York City
Frank Arthur Keller, A.B.	New York
Edward Leland Kellogg	New York City
William Vaillant Kellogg, M.D.	Ohio
Robert Dalton Kelly	Tennessee
Thomas Alexander Kenyon	New York City
Edward Cumberland Kershner, A.M.	New York City
Edward Loughborough Keyes, A.B.	New York City
Edward Stephen Kiley, A.B.	Rhode Island
Theron Wendell Kilmer	New York City
Sumner Butler Banks Kingsley	New York
Edwin Mathews Kitchel, M.D.	New Jersey
William Thomas Charles Klein	New York City
Ephraim Daniels Klots	New York City
Charles Platt Knowles	New York
Josiah George Knowlton	Missouri
Albert Edwin Koonz	New Jersey
Francis Anthony Kopecky	New York City
Aaron Samuel Koransky	New York City
Conrad Piser Kornreich	New York City
George William Kosmak	New York City
Theodore Morse Koupal, Jr.	New York City
John B. Kouwenhoven, A.B.	New York
Géza Kremer	New York City
Joseph Allen Kyle, B.S.A.	Texas
Edmond John Labbé	Oregon
Linnaeus Edford La Fetra, A.B.	District of Columbia
William Watson Laing	Brooklyn, N. Y.
James Rudolph Laird	New Jersey
Adrian Van Sinderen Lambert, A.B.	New York City
George Francis Lamont	Brooklyn, N. Y.

NAME	RESIDENCE
Edward Rutledge Lampson, Jr., A.B.....	New York City
William Judson Lamson, A.B.	New Jersey
George Ludwig Laporte, Jr.	New Jersey
John Henry Larkin, A.B.....	New York City
Sidney Locock Lasell, A.B.....	New Jersey
George Alfred Lawrence, A.B.	California
William Tilson Lawson.....	New York City
Medwin Leale.....	New York City
Prescott Le Breton	New York City
George Bolling Lee	Virginia
Thomas Sim Lee, A.B.....	New York City
Theodore Alexander Lehmann	New Jersey
Oscar Leiser	New Jersey
Arnold Gustave Leo.....	New York City
Louis Lesinsky.....	New York City
Frederick William Lester.....	New York
Phoebus Aaron Levene, M.D.....	New York City
Leopold Ellsworth Levine.....	New York City
Hugo Adolf Levison.....	New York City
Morris Levy, A.B.....	New York City
Leon Theodore Lewald.....	Iowa
John Cadwallader Lewis.....	Kentucky
Reginald Joseph Moss Lewis.....	New York City
John Oscar Lewright, M.D.	Texas
Emmanuel Libman, A.B.....	New York City
George French Little.....	Brooklyn, N. Y.
Alfredo Lizano, A.B., M.D.....	New York City
Murray Loewenthal.....	New York City
Eli Long, Jr.....	New Jersey
Arthur Hubert Longstreet.....	Brooklyn, N. Y.
William Popper Loth.....	New York City
Arthur Jewett Lougee, A.B.....	New Hampshire
William Edgar Lower, M.D.....	Ohio
George Davis Lowry	Ohio
William Henry Luckett, B.S.A.....	Texas
Robert Barkley Ludington, B.S.....	New York City
George Floyd Ludlow.....	New York
Stephen Henry Lutz	Brooklyn, N. Y.
Henry Graham MacAdam.....	New York City
Cecil Laurence MacCoy.....	New Jersey
Robert Langdon Macdermott.....	New Jersey
Arthur Lee Macken.....	New York
William Edward Macklin, M.B.....	China
James Wright MacNider.....	New York City
John Silliman Macnie, A.B.....	N. Dakota
Montefiore Levy Maduro.....	New York City

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Frank Hosmer Magness.....	New York City
George Butler Magoun, A.B.....	New York City
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Frank Wickham Mallalieu, B.S.....	New Jersey
Edward Robert Maloney.....	Connecticut
Leopold Marcus.....	New York City
David Trumbull Marshall.....	New Jersey
Jeremiah Neil Martin, A.B.....	New York City
John Miller Masury.....	New York City
Albert David Mayer.....	Texas
Walter Frederick McCabe.....	Dakota
Robert McCastline.....	New York City
George Eldredge McClellan, Ph.B.....	Connecticut
Robert Hall McConnell.....	New York City
William Thomas McConville.....	New Jersey
John Butler McCook, B.S.....	Connecticut
Arthur Thomas McCormack, A.B.....	Kentucky
Daniel Leo McCormick.....	New Jersey
John Joseph McCoy.....	New York City
Hugh Farber McGaughey, B.S.....	Minnesota
Arthur Francis McGinn, A.B.....	Rhode Island
James Nicholas McKone, A.B.....	Connecticut
Dice McLaren.....	New York City
Frank Harold McLaury.....	New York City
Thomas William McManus.....	New York City
Joseph Mac McMillan.....	New York
William Henry McWilliam.....	New York City
Clarence Arthur McWilliams, A.B.....	Brooklyn, N. Y.
Frank Sherman Meara, A.B., Ph.D.....	Massachusetts
William Jay Mersereau.....	New York
John Izard Middleton, Jr., A.B.....	New York City
Emery Austin Miller.....	New York City
Jesse Preston Miller, A.B.....	South Carolina
Richard Thomas Miller.....	New York City
Roger Harrison Miller, Ph.B.....	Ohio
Samuel Osgood Miller.....	Massachusetts
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Augustine Joseph Molloy.....	Brooklyn, N. Y.
George Swan Mooney.....	New York City
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Harold James Morgan.....	New York
Edward Moriarty.....	Connecticut
William Thomas Morrey, A.B., A.M.....	New York City
Edward Joseph Morris, A.B.....	Brooklyn, N. Y.
John Bennett Morrison.....	Canada
Paul Morrison, A.B.....	Ohio

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Robert Leonard Morrison.....	West Virginia
Elwood Stokes Morton.....	New Jersey
Wesley Thomas Mulligan, Ph.B.....	New York
Adolph Mund, Ph.G.....	New York City
Deas Murphy, A.B.....	New York City
Joseph Paul Murphy, B.S.....	New York City
Francis James Murray.....	New York City
Thomas Francis Mylod.....	New York
John William Nelson, A.B.....	Nebraska
Marcus Neustaedter.....	New York City
Alfred Nelson New.....	New York
Derwood Norval Livingstone Newbury.....	New York City
Elwin Milton Nichols.....	Vermont
Lorenzo Miller Nickerson.....	Brooklyn, N. Y.
Carl Jonas Ericson Nordstrom.....	Sweden
Nathaniel Read Norton.....	Brooklyn, N. Y.
Edward Genung Nugent, A.B.....	New York
John Nydes.....	New York City
Robert Denniston Oakley.....	New York
Frank Richard Oastler, A.B.....	New York City
John Hilbert Oberle.....	New York City
James Coughlin O'Donnell, A.B.....	Massachusetts
Michael William O'Gorman, A.B.....	New Jersey
Charles Henry Francis O'Neill, A.B.....	New York City
James Francis O'Neill.....	New Jersey
Albert Oppenheim.....	New York City
Michael Francis O'Shea.....	Pennsylvania
Charles Ray Otis.....	New York
Frank Burton Otis, A.B.....	Massachusetts
Ralph Chester Otis.....	Illinois
Gustav Otto, Jr.....	New Jersey
Frederic Francis Owens, A.B.....	Massachusetts
Henry Farrar Owsley, Ph.G.....	Ohio
Frederic Chauncey Paffard.....	Brooklyn, N. Y.
Frank Elmer Pagett.....	New York
Edwin Obidiah Palmer.....	New York City
Gist Palmer, B.S.....	West Virginia
Richard Waugh Palmer.....	West Virginia
Edward Oliver Parker, A.B.....	New York City
George Mitchell Parker.....	Ohio
Jacob Hohanness Parseghian.....	New York City
Payn Bigelow Parsons, A.B.....	New York City
Horace Wilbur Patterson.....	New York City
George Stark Pearce.....	New York
Henry Russell Pemberton, B.S., A.M.....	Virginia
Guy Sherman Peterkin.....	New York

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James Edward Pettus.....	Brooklyn, N. Y.
William Robert Pfeuffer, Ph.G.....	Texas
Charles Dickinson Phelps, A.B.....	Connecticut
James Jones Philips, A.B.....	North Carolina
Paul Chrysostom Phillips, A.B.....	New Hampshire
Antonio Davide Pisani, Ph.G.....	New York City
Anthony Joseph Pixley.....	New York City
Morris Pollack.....	New York City
Joseph Egbert Pollard.....	New Jersey
Nelson Asa Pomeroy.....	Connecticut
David Warren Poor, Jr., A.B.....	New Jersey
Joseph William Posthauer.....	New York City
Walter Bonamy Power... ..	New Jersey
Otto Emil Prellwitz, A.B.....	New York City
Paul Peter Prendergast.....	Brooklyn, N.Y.
Henry James Prentiss, M.E.....	New York City
Albert Ward Preston, A.B.....	Maine
Louis Frederick Potta.....	New York City
Myles Purvin.....	Brooklyn, N. Y.
Rudolph Frederick Rabe, Jr.....	New Jersey
Edwin Thompson Randall.....	Brooklyn, N. Y.
Frank Andrew Ratigan, A.B.....	Massachusetts
George Rauchfuss.....	New York City
John Henry Reb.....	Brooklyn, N. Y.
Arthur Lynnewood Reeve.....	Brooklyn, N. Y.
William Stewart Reoch, B.P.....	Rhode Island
Jerome Rice.....	New York City
Strother William Rice, A.B.....	New Jersey
Jacob Monroe Rich, E.M., C.E.....	New York City
Michael Placzek Rich.....	New York City
Emil Gustave Ring.....	New York City
G. Johnson Rittenhouse.....	New York City
Francisco Rivera—E.....	New York City
Dudley De Vore Roberts.....	New Jersey
Jonathan Manning Roberts.....	New Jersey
Frank Wade Robertson.....	New York City
Fielding Tecumseh Robeson, A.B.....	New York City
Charles Thomas Robinson, A.B.....	New York City
John Alexander Robinson... ..	New York City
Joseph Roby, A.B.....	New York City
Albert Vincent Rockwell.....	New Jersey
Harry Rodman, A.B.....	New York City
Harry Heth Rodman.....	New York City
Mariano Rodriguez.....	Costa Rica
William Homan Roe.....	New York City
Edward Nicholas Roeser, B.S.....	New York City

NAME	RESIDENCE
Robert Hastings Rogers.....	New Jersey
John Albert Ronayne, A.B.....	Massachusetts
Stephen White Roof, Jr.....	New York City
Edwin Leopold Rose.....	New York City
Malcolm Cameron Rose.....	New York City
Louis Rosenwasser.....	New York City
Clark Green Rossman, C.E.....	New York
Thomas Aloysius Rothwell.....	New York City
Solomon Rottenberg, Ph.G.....	New York City
William Marcus Russell.....	Brooklyn, N. Y.
Thomas Eugene Ryan.....	New York City
Walter Gohring Ryon.....	New York
John Bautista Sacasa.....	Nicaragua
Ferdinand William Sackett, A.B.....	New York
Moses Sahud.....	New York City
Trafford Brasee Salisbury.....	New York City
Eugene Boutelle Sanger, Ph.B.....	Maine
John Wellington Sansom.....	New Jersey
George Reese Satterlee.....	New York City
Joachim Isaak Schachter.....	New York City
Peter Schaeffler, Jr.....	New York City
Philip Michael Schaffner.....	Brooklyn, N. Y.
Harry Philip Scharringhausen.....	New York City
Robert McEwen Schauffler, A.B.....	Missouri
Michael Schiller, B.S.....	New York City
Winfield Scott Schley, Jr., A.B.....	New York
Charles Henry Schlichter.....	New Jersey
Adam Emil Schmitt.....	New York City
Edward Schnaper.....	New York City
William Carl Schoenijahn.....	Brooklyn, N. Y.
Warren Schoonover, Jr.....	New York City
Alfred Schwab.....	New York City
Samuel Emanuel Schwartz.....	New York City
John William Scott, A.B.....	Kentucky
Ambrose Alfonse Scouler, A.B.....	New York
Heyward Scudder, A.B.....	New York City
Frank Walker Sears.....	New York
John Conlay Selby.....	New York City
George Henry Semken.....	New York City
Charles Reeves Sewell.....	New York City
James Bernard Shannon, Jr., A.B.....	Connecticut
Raymond Wilbur Shattuck.....	New York City
James Daniel Shea.....	Brooklyn, N. Y.
Peter Owen Shea, A.B.....	Massachusetts
Forrest Shepherd, A.B.....	Connecticut
George William Shera.....	New Jersey

NAME	RESIDENCE
Walter Aikman Sherwood.....	New Jersey
William John Shields, Jr.....	New York City
John Lawrence Sheils.....	New York City
Percy John Shute.....	New York City
Edwin George Shutz.....	Brooklyn, N. Y.
Ernest Frederick Sickenberger.....	New York City
Ludwig Silverman Simon, Ph.B.....	Iowa
James Gordon Hamilton Simpson	New York City
Daniel Alison Sinclair.....	New York City
Malcolm Toland Sine, C.E.....	California
Walter Thomas Slevin.....	Brooklyn, N. Y.
William Arthur Albertson Sloat.....	New York
Alfred Keene Smith, Ph.G.....	New York
Robert Newhall Smith.....	New York City
Robert Whitehill Smith, Jr.....	New York City
Thomas Allison Smith.....	Connecticut
Rev. William Walter Smith, A.B., A.M.....	New York City
Jacob Sobel, A.B.....	New York City
Lazarus Sylvester Sobel.....	New York City
Paul Frederick Sondern.....	Brooklyn, N. Y.
Frederick Hessler Sparrenberger.....	Brooklyn, N. Y.
Harry Spence.....	Texas
Shirley Erving Sprague.....	New York City
John Bentley Squier, Jr.....	New York City
Louis John Frederick Staack.....	New York City
Harry Grant Stafford.....	New York City
Charles Daniel Steenken, A.B.....	Maryland
William Steinach, A.B.....	New York City
Victor Steinberger, A.B.....	New York City
Solomon Steiner	New York City
Samuel Stern.....	New York City
Plowdon Stevens, Jr., B.S....	New York City
Arch Wilson Stiles.....	New York
William Harvey Stilson.....	New Jersey
Richard Stinson.....	New Jersey
Moses Ashby Stivers.....	New York
Casper Stock, B.S.....	New York City
James Graham Phelps Stokes, Ph.B.....	New York City
George Burnside Story, M.D.....	Oregon
James Stephen Stout.....	New Jersey
George Stoddard Stout.....	New Jersey
Walter Whitcomb Strang.....	New York City
August Adrian Strasser.....	New Jersey
John Francis Sullivan, A.B.....	Connecticut
Albert Earl Sumner, A.B.....	New York
Carlyle Edgar Sutphen, Jr., A.B.....	New Jersey

NAME	RESIDENCE
Martin John Synnott.....	New Jersey
Dennis Joseph Sweeney.....	Brooklyn, N. Y.
Paul Gerald Taddiken.....	New York City
Robert Wood Tate.....	Tennessee
Alfred Simpson Taylor, A.M.....	Rhode Island
Joseph Charles Taylor.....	New York
Stephen Livingston Taylor, A.B.....	New York
Arthur Henry Temple.....	New Jersey
Arthur Seymour Tenner, A.B.....	New York City
William Stoutenborough Terribery, A.B.....	New York City
William Gilbert Terwilliger.....	New York
William Henry Theban, A.B.....	New York City
Carl Theobald, B.S.....	New York City
William Epaphroditus Thomas.....	New York City
Joseph Cheesman Thompson.....	New York
George Charles Emil Thum, Ph.G.....	New York City
Samuel Wood Thurber, B.S.....	France
Charles Brundage Tiernan.....	New Jersey
Joseph Reynolds Tillinghast, Jr.....	New Jersey
Benjamin Trowbridge Tilton, A.B.....	Rhode Island
Walter Timme, B.S.....	New York City
Leo Tobias, B.S.....	New York City
Robert Storer Tracy, A.B.....	New Jersey
Walter Day Trenwith.....	California
Edwin Bingham Trippe.....	New York City
Charles Henry Trowbridge, Ph.G.....	Wisconsin
Guy Hanford Turrell.....	New York City
Winne Tygert.....	New Jersey
Sidney Ulfelder, A.B.....	New York City
James Samuel Unger.....	New York City
Adolph Hermann Urban, B.S.....	New York City
Ignacio Vado, Jr., A.B.....	Mexico
Herbert Bailey Vail, A.B.....	New York
Charles Auguste Valadier, A.B.....	New York City
Gilbert Julius Van der Smissen.....	New York City
William Percy Van Ness.....	New York
Frank M. Van Orden, A.B.....	New York
Arthur Ward Van Riper.....	New Jersey
Albert Myers Van Sickle, Ph.G.....	New York City
Frederick Van Vliet.....	New Jersey
William Remsen Varick.....	New York
Harwood Vernon, A.B.....	New York City
Maximilian Joseph Voos.....	New York City
Augustus Baldwin Wadsworth, B.S.....	New York City
Herman Gustave Wahlig.....	New York City
Fred Cole Wallin.....	New York

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Freeman Ford Ward.....	New York City
George John Wardenburg.....	Brooklyn, N. Y.
John Sherreaf Waters, A.B.....	New York City
James Thomas Watkins, Jr.....	New York City
James Swayze Watson, M.D.....	Illinois
Walter Duval Webb.....	New York City
William Edmund Weber, A.B.....	New Jersey
Henry Goodwin Webster, A.B.....	Brooklyn, N. Y.
Stuart Webster, A.B.	Illinois
Howard Rankin Weirick	Pennsylvania
Charles Augustine Wells.....	New Jersey
Stephen Whitaker Wells.....	New York City
George Oakley Welshman.....	New Jersey
William Edward West, A.B.....	New York
John Sabastian Wever.....	Kansas
Henry Clay Wheeler, M.D.....	Pennsylvania
Lyman Hall Wheeler.....	New York
Elmer George Wherry, A.B.....	New Jersey
Horace J. Whitacre, B.S.....	Ohio
Harry Draper White.....	New York
Wallace White.....	New Jersey
Frederick Newton Whitehorne, A.B.....	New York City
Charles Allen Whiting, A.B.....	New York City
James Raynor Whiting, Jr., A.B.....	New York City
Ernest Nash Wilcox, A.B.....	Massachusetts
George Frank Wilkow.....	New York
Adrian Dorsey Williams.....	Brooklyn, N. Y.
Herbert Upham Williams, M.D.....	New York
Howard Crosby Williams.....	New York City
William Edwin Williams	Tennessee
William Robert Williams, A.M.....	Minnesota
Henry Christie Williamson.....	New York City
Edward Temple Willson.....	New York City
Harry Wilson	New York City
Harry Hall Wilson.....	New York
William Robert Anthony Wilson, A.B.....	Illinois
Isaac Wilzin.....	Brooklyn, N. Y.
Henry Wintsch.	New Jersey
Edward Darragh Wisely.....	New York
Albert Jackson Wittson, B.S., M.D.....	North Carolina
August Aloysius Wolff.....	New York City
Ferdinand Charles Wolff.....	New Jersey
Francis Carter Wood, B.S.....	New Jersey
Goodall Harrison Wooten, B.S., A.M.....	Texas
Joe Sill Wooten, B.Sc.....	Texas
George Hermann Wright, A.B.....	New York City

NAME	RESIDENCE
William Wright.....	New York
Daniel Woodbury Wynkoop.....	New York City
Andrew Benedict Yard.....	New York City
Vincent Jay Youmans.....	New York
Charles Bellamy Young.....	Brooklyn, N. Y.
John Louis Zabala, B.S.....	California
Edwin Garvin Zabriskie.....	New York
Fred Templeton Zabriskie, A.B.....	New York City
Charles Cowing Zacharie.....	New York
Paul Henry Zagat.....	New York City
Charles Henry Bernard Zeiser.....	New York
Total	782

SCHOOL OF MINES

The following departments are represented in the Faculty :

ARCHITECTURE	MATHEMATICS
ASTRONOMY	MECHANICS
CHEMISTRY	MINERALOGY AND
CIVIL ENGINEERING	METALLURGY
ELECTRICAL ENGINEERING	MINING
MECHANICAL ENGINEERING	PHYSICS
GEOLOGY	

Officers of the Faculty

CHARLES F. CHANDLER, PH.D., M.D., LL.D....	<i>Dean and ex-officio Member of the University Council</i>
WILLIAM R. WARE, B.S.....	<i>Elected Delegate to University Council</i>

Standing Committees

COMMITTEE ON ADMISSIONS AND EXAMINATIONS

Professor Chandler
“ Van Amringe
“ Munroe

COMMITTEE ON SPECIAL STUDENTS

Professor Chandler
“ Hutton
“ Hamlin

Faculty

SETH LOW, LL.D., *President*

Professors

THOMAS EGLESTON, E.M., Ph.D., LL.D.,	<i>Professor of Mineralogy and Metallurgy</i>
CHARLES F. CHANDLER, Ph.D., M.D., LL.D.,	<i>Professor of Chemistry</i>
J. HOWARD VAN AMRINGE, Ph.D., LL.D.,	<i>Professor of Mathematics</i>
OGDEN N. ROOD, A.M.,	<i>Professor of Physics</i>
HENRY S. MUNROE, E.M., Ph.D.,	<i>Professor of Mining</i>
WILLIAM R. WARE, B.S.,	<i>Professor of Architecture</i>
FREDERICK R. HUTTON, C.E. Ph.D.,	<i>Professor of Mechanical Engineering</i>

- JOHN K. REES, A.M., E.M., *Professor of Astronomy and Director of the Observatory*
 PIERRE DE PEYSTER RICKETTS, E.M., Ph.D., *Professor of Analytical Chemistry and Assaying*
 JASPER T. GOODWIN, A.M., LL.B., *Adjunct Professor of Mathematics*
 ALFRED D. F. HAMLIN, A.M., *Adjunct Professor of Architecture*
 ALFRED J. MOSES, E.M., Ph.D., *Adjunct Professor of Mineralogy*
 CHARLES E. COLBY, E.M., C.E., *Adjunct Professor of Organic Chemistry*
 JAMES L. GREENLEAF, C.E., *Adjunct Professor of Civil Engineering*
 FRANK DEMPSTER SHERMAN, Ph.B., *Adjunct Professor of Architecture*
 JAMES F. KEMP, E.M., *Professor of Geology*
 ROBERT PEELE, JR., E.M., *Adjunct Professor of Mining*
 FRANCIS B. CROCKER, E.M., *Professor of Electrical Engineering*
 WILLIAM HALLOCK, A.B., Ph.D., *Adjunct Professor of Physics*
 WILLIAM H. BURR, C.E., *Professor of Civil Engineering*
 ROBERT S. WOODWARD, C.E., Ph.D., *Professor of Mechanics*

NOTE: For details as to other officers of instruction see departmental statements.

COURSES OF INSTRUCTION

The School of Mines offers seven technical courses leading to professional degrees. These courses consist of required work. In addition, the school offers a graduate course leading to the professional degree of Sanitary Engineer. Besides this professional instruction the school permits certain subjects to be studied in partial fulfilment of the requirements for the degrees of A.B., A.M., and Ph.D. For the sake of clearness, the necessary information as to these different kinds of work is set forth in three parts, numbered respectively I, II, III.

PART I

UNDERGRADUATE COURSES FOR THE PROFESSIONAL DEGREES

1	Mining Engineering	leading to degree of	E.M.
2	Civil Engineering	" " "	C.E.
3	Electrical Engineering	" " "	E.E.
4	Metallurgy	" " "	Met.E.
5	Geology and Palæontology	" " "	B.S.
6	Analytical and Applied Chemistry	" " "	B.S.
7	Architecture	" " "	B.S.

COURSE IN MINING ENGINEERING

First Year

First Session

ALGEBRA (Mathematics V)—4 hours. Professor GOODWIN

TRIGONOMETRY (Mathematics IV)—4 hours. Professor GOODWIN

PHYSICS (Physics I)—3 hours. Professor ROOD and Mr. GORDON

CHEMISTRY (Chemistry I)—3 hours. Professor CHANDLER and Mr. WARD

QUALITATIVE ANALYSIS (Chemistry IX)—4 hours, and 15 hours laboratory.
Dr. WELLS and Dr. CUSHMAN

BOTANY (Botany III)—1 hour. Professor BRITTON

BLOWPIPE ANALYSIS (Mineralogy I)—1 hour, and 2 afternoons laboratory.
Professor MOSES, Mr. LUQUER, and Mr. WHITLOCK

CRYSTALLOGRAPHY (Mineralogy II)—2 hours. Professor MOSES

DRAWING (Mechanical Engineering I)—1 hour lecture and drawing-room
practice. Mr. MAYER and Mr. PROVOT

SURVEYING (Civil Engineering I)—2 hours. Professor GREENLEAF and Mr.
TUSKA

Second Session

ANALYTICAL GEOMETRY (Mathematics V)—4 hours. Professor GOODWIN

PHYSICS (Physics I)—3 hours. Professor ROOD and Mr. GORDON

CHEMISTRY (Chemistry I)—3 hours. Professor CHANDLER and Mr. WARD

QUALITATIVE ANALYSIS (Chemistry IX)—4 hours, and 15 hours laboratory.
Dr. WELLS and Dr. CUSHMAN

BOTANY (Botany III)—1 hour. Professor BRITTON

MINERALOGY (Mineralogy III)—2 hours lectures and 1 afternoon labora-
tory. Professor MOSES and Mr. LUQUER

DESCRIPTIVE GEOMETRY } (Mechanical Engineering I)—2 hours, and draw-
DRAWING } ing-room practice. Mr. MAYER and Mr. PROVOT

Summer Vacation

SURVEYING (Civil Engineering XIII). Professor GREENLEAF and Mr. FOYÉ

COURSE IN MINING ENGINEERING

Second Year

First Session

ANALYTICAL GEOMETRY (Mathematics VIII)—4 hours. Professor VAN AMRINGE

CALCULUS (Mathematics VIII)—4 hours. Professor VAN AMRINGE

PHYSICS (Physics III)—2 hours. Professor HALLOCK

PHYSICAL LABORATORY (Physics III)—2 hours. Professor HALLOCK

APPLIED CHEMISTRY (Chemistry XXIX)—3 hours. Professor CHANDLER

BIOLOGY, ZOÖLOGY (Biology I)—1 hour. Dr. DEAN

MINERALOGY (Mineralogy III)—2 hours lectures and 2 afternoons laboratory. Professor MOSES and Mr. LUQUER

EXCAVATION AND TUNNELLING (Mining I)—3 hours. Professor PEELE

DRAWING (Mechanical Engineering I)—Drawing-room practice. Mr. MAYER

Second Session

CALCULUS (Mathematics VIII)—4 hours. Professor VAN AMRINGE

PHYSICAL LABORATORY (Physics III)—2 hours. Professor HALLOCK

APPLIED CHEMISTRY (Chemistry XXIX)—3 hours. Professor CHANDLER

QUANTITATIVE ANALYSIS (Chemistry XVI)—2 hours, and 15 hours laboratory practice. Professor RICKETTS, Mr. BOWEN, and Dr. VULTÉ

BIOLOGY, ZOÖLOGY (Biology I)—1 hour. Dr. DEAN

OPTICAL MINERALOGY (Mineralogy VI)—2 hours lectures and 1 afternoon laboratory for 2 months. Mr. LUQUER

LITHOLOGY (Geology V)—2 hours, and 1 afternoon for 2 months. Professor KEMP

BORING AND SHAFT SINKING (Mining II)—2 hours. Professor PEELE

MINE SURVEYING (Mining IX)—1 hour. Mr. DURHAM

DRAWING (Mechanical Engineering I)—2 hours lectures, and drawing-room practice. Mr. MAYER

Summer Vacation

PRACTICAL MINING (Mining XI) *optional*—6 weeks. Professor PEELE and Mr. DURHAM

SURVEYING (Civil Engineering XIV). Professor GREENLEAF and Mr. FOYÉ

COURSE IN MINING ENGINEERING

Third Year

First Session

ANALYTICAL MECHANICS (Mechanics I)—3 hours. Professor WOODWARD

ASSAYING (Chemistry XXI)—4 hours, and 3 afternoons and Saturday, 15 hours laboratory practice. Professor RICKETTS and Mr. MILLER

GEOLOGY (Geology II)—3 hours. Professor KEMP

ENGINEERING (Civil Engineering V)—3 hours. Professor BURR

PROPERTIES OF MATERIALS (Mechanical Engineering V)—2 hours. Professor HUTTON

MINING (Mining III)—4 hours. Professor MUNROE

METALLURGY (Metallurgy I)—4 hours. Professor EGLESTON and Mr. STRUTHERS

DESIGN, PROBLEMS (Civil Engineering V)—2 afternoons. Professor BURR and Mr. FOYÉ

Second Session

ANALYTICAL MECHANICS (Mechanics I)—3 hours. Professor WOODWARD

GEOLOGY (Geology II)—3 hours. Professor KEMP

ENGINEERING (Civil Engineering V)—2 hours. Professor BURR

PROPERTIES OF MATERIALS (Mechanical Engineering VI)—2 hours, and laboratory work. Professor HUTTON, Mr. WOOLSON, and Mr. GREGORY

ELECTRICAL ENGINEERING (Electrical Engineering V)—2 hours. Professor CROCKER

ELECTRICAL ENGINEERING LABORATORY (Electrical Engineering V)—2 hours. Mr. SEVER

ORE DRESSING (Mining IV)—4 hours. Professor MUNROE

METALLURGY (Metallurgy II and III)—4 hours. Professor EGLESTON and Mr. STRUTHERS

GRAPHICAL STATICS (Civil Engineering VI)—2 hours. Professor GREENLEAF

DESIGN, PROBLEMS (Civil Engineering V and VI)—Afternoon work. Professor BURR and Mr. FOYÉ

Summer Vacation

PRACTICAL MINING (Mining XI)—6 weeks. Professor PEELE and Mr. DURHAM

RAILROAD SURVEYING (Civil Engineering XV). Professor GREENLEAF and Mr. FOYÉ

COURSE IN MINING ENGINEERING

Fourth Year

First Session

ECONOMIC GEOLOGY (Geology III)—3 hours, lectures and conferences. Professor KEMP

MANAGEMENT OF BOILERS (Mechanical Engineering IX)—2 hours. Professor HUTTON

HEAT AND ITS APPLICATIONS (Mechanical Engineering VII)—2 hours, and laboratory practice. Professor HUTTON and Mr. GREGORY

MOTORS (Mechanical Engineering XI)—1 hour. Professor HUTTON

MACHINERY AND MILL WORK (Mechanical Engineering XIII)—2 hours. Mr. WOOLSON

MASONRY STRUCTURES (Civil Engineering XI)—2 hours. Professor BURR

MINE ENGINEERING (Mining VI)—2 hours. Professor MUNROE

MINE PLANT (Mining VII)—2 hours. Professor PEELE

METALLURGY (Metallurgy IV)—4 hours. Professor EGGLESTON and Mr. STRUTHERS

HYGIENE

DESIGN OF MINE PLANT (Mining VIII)—5 afternoons. Professor PEELE

Second Session

ORE DRESSING (Mining V)—1 afternoon first half of term. Professor MUNROE

ORE TESTING (Chemistry XXIII)—1 afternoon last half of term. Professor RICKETTS and Mr. MILLER

ECONOMIC GEOLOGY (Geology III)—3 hours, lectures and conferences. Professor KEMP

MANAGEMENT OF ENGINES (Mechanical Engineering X)—4 hours. Professor HUTTON

HEAT AND ITS APPLICATIONS (Mechanical Engineering VIII)—2 hours. Professor HUTTON

DYNAMICS OF ENGINEERING (Mechanical Engineering XII)—1 hour. Professor HUTTON

MACHINERY AND MILL WORK (Mechanical Engineering XIII)—2 hours. Mr. WOOLSON

ROADS AND WATER SUPPLY (Civil Engineering III and IV in part)—2 hours. Professor GREENLEAF and Mr. FOYÉ

MINE ENGINEERING (Mining VI)—1 hour. Professor MUNROE

MINE PLANT (Mining VII)—2 hours. Professor PEELE

MINE ADMINISTRATION (Mining X)—1 hour. Professor MUNROE

METALLURGY (Metallurgy IV)—4 hours. Professor EGGLESTON and Mr. STRUTHERS

HYGIENE

DESIGN OF MINE PLANT (Mining VIII)—5 afternoons. Professor PEELE

PROJECT or THESIS in Mining

COURSE IN CIVIL ENGINEERING

First Year

First Session

ALGEBRA (Mathematics V)—4 hours. Professor GOODWIN

TRIGONOMETRY (Mathematics IV)—4 hours. Professor GOODWIN

PHYSICS (Physics I)—3 hours. Professor ROOD and Mr. GORDON

CHEMISTRY (Chemistry I)—3 hours. Professor CHANDLER and Mr. WARD

DRAWING (Mechanical Engineering I)—1 hour lecture and drawing-room practice. Mr. MAYER and Mr. PROVOT

SURVEYING (Civil Engineering I)—2 hours. Professor GREENLEAF and Mr. TUSKA

Second Session

ANALYTICAL GEOMETRY (Mathematics V)—4 hours. Professor GOODWIN

PHYSICS (Physics I)—3 hours. Professor ROOD and Mr. GORDON

CHEMISTRY (Chemistry I)—3 hours. Professor CHANDLER and Mr. WARD

DESCRIPTIVE GEOMETRY } (Mechanical Engineering I)—2 hours, and drawing-
DRAWING } room practice. Mr. MAYER and Mr. PROVOT

Summer Vacation

SURVEYING (Civil Engineering XIII). Professor GREENLEAF and Mr. FOYÉ

COURSE IN CIVIL ENGINEERING

Second Year

First Session

ANALYTICAL GEOMETRY (Mathematics VIII)—4 hours. Professor VAN AMRINGE

CALCULUS (Mathematics VIII)—4 hours. Professor VAN AMRINGE

PHYSICS (Physics III)—2 hours. Professor HALLOCK

PHYSICAL LABORATORY (Physics III)—2 hours. Professor HALLOCK

APPLIED CHEMISTRY (Chemistry XXIX)—3 hours. Professor CHANDLER

MINERALS OF BUILDING STONES (Mineralogy IV)—2 hours lectures and 1 afternoon laboratory. Professor MOSES and Mr. LUQUER

ENGINEERING (Civil Engineering III)—1 hour. Mr. FOYÉ

EXCAVATION AND TUNNELLING (Mining I)—3 hours. Professor PEELE

SANITARY ENGINEERING OF BUILDINGS (Civil Engineering II)—1 hour. Professor GREENLEAF

GRAPHICS } (Mechanical Engineering I)—2 hours lectures and drawing-room
DRAWING } practice. Mr. MAYER and Mr. PROVOT

Second Session

CALCULUS (Mathematics VIII)—4 hours. Professor VAN AMRINGE

PHYSICAL LABORATORY (Physics III)—2 hours. Professor HALLOCK

APPLIED CHEMISTRY (Chemistry XXIX)—3 hours. Professor CHANDLER

MINERALS OF BUILDING STONES (Mineralogy IV)—2 hours lectures and 1 afternoon laboratory. Professor MOSES and Mr. LUQUER

ENGINEERING (Civil Engineering III)—1 hour. Mr. FOYÉ

SANITARY ENGINEERING OF BUILDINGS (Civil Engineering II)—1 hour. Professor GREENLEAF

DRAWING (Mechanical Engineering I)—2 hours lectures and drawing-room practice. Mr. MAYER

Summer Vacation

SURVEYING (Civil Engineering XIV). Professor GREENLEAF and Mr. FOYÉ

COURSE IN CIVIL ENGINEERING

Third Year

First Session

ANALYTICAL MECHANICS (Mechanics I)—3 hours. Professor WOODWARD

GEOLOGY (Geology II)—3 hours. Professor KEMP

GEODESY (Astronomy III)—2 hours. Professor REES and Mr. JACOBY

ENGINEERING (Civil Engineering V)—3 hours. Professor BURR

PROPERTIES OF MATERIALS (Mechanical Engineering V)—2 hours. Professor HUTTON

WATER SUPPLY AND IRRIGATION (Civil Engineering IV)—2 hours. Professor GREENLEAF

SEWAGE DISPOSAL (Civil Engineering VIII)—2 hours. Professor BURR

DESIGN, PROBLEMS (Civil Engineering V)—Afternoon work. Professor BURR and Mr. FOYÉ

Second Session

ANALYTICAL MECHANICS (Mechanics I)—3 hours. Professor WOODWARD

GEOLOGY (Geology II)—3 hours. Professor KEMP

GEODESY (Astronomy III)—2 hours. Professor REES and Mr. JACOBY

ENGINEERING (Civil Engineering V)—2 hours. Professor BURR

THEORY OF TRUSSES (Civil Engineering VII)—2 hours. Professor BURR

PROPERTIES OF MATERIALS (Mechanical Engineering VI)—2 hours, and laboratory work. Professor HUTTON, Mr. WOOLSON, and Mr. GREGORY

ELECTRICAL ENGINEERING (Electrical Engineering V)—2 hours. Professor CROCKER

ELECTRICAL ENGINEERING LABORATORY (Electrical Engineering V)—2 hours. Mr. SEVER

GRAPHICAL STATICS (Civil Engineering VI)—2 hours. Professor GREENLEAF

DESIGN, PROBLEMS (Civil Engineering V, VI, and VII)—Afternoon work. Professor BURR and Mr. FOYÉ

Summer Vacation

PRACTICAL GEODESY (Astronomy III)—6 weeks. Professor REES, Mr. JACOBY, and Mr. MONELL

RAILROAD SURVEYING (Civil Engineering XV). Professor GREENLEAF and Mr. FOYÉ

COURSE IN CIVIL ENGINEERING

Fourth Year

First Session

GEODESY (Astronomy III)—2 hours. Professor REES and Mr. JACOBY

CIVIL ENGINEERING (Civil Engineering X)—2 hours. Professor BURR

MANAGEMENT OF BOILERS (Mechanical Engineering IX)—2 hours. Professor HUTTON

HEAT AND ITS APPLICATIONS (Mechanical Engineering VII)—2 hours, and laboratory practice. Professor HUTTON and Mr. GREGORY

MOTORS (Mechanical Engineering XI)—1 hour. Professor HUTTON

MACHINERY AND MILL WORK (Mechanical Engineering XIII)—2 hours. Mr. WOOLSON

MASONRY STRUCTURES (Civil Engineering XI)—2 hours. Professor BURR

RAILROAD ENGINEERING (Mechanical Engineering XV)—3 hours, first half of session. Mr. WOOLSON. (Civil Engineering IX)—3 hours, second half of session. Mr. FOYÉ

HYGIENE

DESIGN, PROBLEMS (Civil Engineering X and XI)—afternoon work

Second Session

CIVIL ENGINEERING (Civil Engineering X)—2 hours. Professor BURR

MANAGEMENT OF ENGINES (Mechanical Engineering X)—4 hours. Professor HUTTON

HEAT AND ITS APPLICATIONS (Mechanical Engineering VIII)—2 hours. Professor HUTTON

DYNAMICS OF ENGINEERING (Mechanical Engineering XII)—1 hour. Professor HUTTON

MACHINERY AND MILL WORK (Mechanical Engineering XIII)—2 hours. Mr. WOOLSON

MASONRY STRUCTURES (Civil Engineering XI)—2 hours. Professor BURR

SEWERS AND HARBORS (Civil Engineering XII)—2 hours. Professor BURR

RAILROAD ENGINEERING (Civil Engineering IX)—3 hours. Mr. FOYÉ

HYGIENE

DESIGN, PROBLEMS (Civil Engineering X and XI)—Afternoon work

PROJECT, on some Civil Engineering subject approved by the head of the department

COURSE IN ELECTRICAL ENGINEERING

First Year

First Session

ALGEBRA (Mathematics V)—4 hours. Professor GOODWIN

TRIGONOMETRY (Mathematics IV)—4 hours. Professor GOODWIN

PHYSICS (Physics I)—3 hours. Professor ROOD and Mr. GORDON

CHEMISTRY (Chemistry I)—3 hours. Professor CHANDLER and Mr. WARD

QUALITATIVE ANALYSIS (Chemistry IX)—4 hours, and 15 hours laboratory.
Dr. WELLS and Dr. CUSHMAN

DRAWING (Mechanical Engineering I)—1 hour lecture and drawing-room
practice. Mr. MAYER and Mr. PROVOT

Second Session

ANALYTICAL GEOMETRY (Mathematics V)—4 hours. Professor GOODWIN

PHYSICS (Physics I)—3 hours. Professor ROOD and Mr. GORDON

CHEMISTRY (Chemistry I)—3 hours. Professor CHANDLER and Mr. WARD

QUALITATIVE ANALYSIS (Chemistry IX)—4 hours, and 15 hours laboratory.
Dr. WELLS and Dr. CUSHMAN

DESCRIPTIVE GEOMETRY } (Mechanical Engineering I)—2 hours, and draw-
DRAWING } ing-room practice. Mr. MAYER and Mr. PROVOT

Summer Vacation

MEMOIR

COURSE IN ELECTRICAL ENGINEERING

Second Year

First Session

ANALYTICAL GEOMETRY (Mathematics VIII)—4 hours. Professor VAN AMRINGE

CALCULUS (Mathematics VIII)—4 hours. Professor VAN AMRINGE

PHYSICS (Physics III)—2 hours. Professor HALLOCK

PHYSICAL LABORATORY (Physics III)—8 hours. Professor HALLOCK

APPLIED CHEMISTRY (Chemistry XXIX)—3 hours. Professor CHANDLER

GRAPHICS } (Mechanical Engineering I)—2 hours lectures and drawing-
DRAWING } room practice. Mr. MAYER

Second Session

CALCULUS (Mathematics VIII)—4 hours. Professor VAN AMRINGE

PHYSICS (Physics III)—2 hours. Professor HALLOCK

PHYSICAL LABORATORY (Physics III)—8 hours. Professor HALLOCK

APPLIED CHEMISTRY (Chemistry XXIX)—3 hours. Professor CHANDLER

ELEMENTS OF ELECTRICAL ENGINEERING (Electrical Engineering VII)—
3 hours. Professor CROCKER and Mr. FREEDMAN

DRAWING (Mechanical Engineering I)—2 hours lectures and drawing-room
practice. Mr. MAYER

Summer Vacation

MEMOIR

COURSE IN ELECTRICAL ENGINEERING

Third Year

First Session

ANALYTICAL MECHANICS (Mechanics I)—3 hours. Professor WOODWARD

ENGINEERING (Civil Engineering V)—3 hours. Professor BURR

PROPERTIES OF MATERIALS (Mechanical Engineering V)—2 hours. Professor HUTTON

DYNAMO AND MOTOR PRACTICE (Electrical Engineering I)—4 hours. Professor CROCKER

THEORY OF DYNAMO AND MOTOR (Mechanics VI)—3 hours. Professor PUPIN

ELECTRICAL MEASUREMENTS (Electrical Engineering IX)—2 hours. Mr. FREEDMAN

ELECTRICAL ENGINEERING LABORATORY (Electrical Engineering X)—8 hours. Mr. SEVER

DRAWING (in connection with Electrical Engineering I)

Second Session

ANALYTICAL MECHANICS (Mechanics I)—3 hours. Professor WOODWARD

ENGINEERING (Civil Engineering V)—2 hours. Professor BURR

PROPERTIES OF MATERIALS (Mechanical Engineering VI)—2 hours, and laboratory work. Professor HUTTON, Mr. WOOLSON, and Mr. GREGORY

ELECTRICAL ENGINEERING (Electrical Engineering VI)—2 hours. Professor CROCKER

ELECTRIC LIGHTING (Electrical Engineering IV)—3 hours. Professor CROCKER

THEORY OF DYNAMO AND MOTOR (Mechanics VII)—3 hours. Professor PUPIN

ELECTRICAL MEASUREMENTS (Electrical Engineering IX)—2 hours. Mr. FREEDMAN

ELECTRICAL ENGINEERING LABORATORY (Electrical Engineering X)—8 hours. Mr. SEVER

DRAWING (Mechanical Engineering III)—10 hours, alternate weeks. Mr. WOOLSON and Mr. GREGORY

Summer Vacation

MEMOIR

COURSE IN ELECTRICAL ENGINEERING

Fourth Year

First Session

MANAGEMENT OF BOILERS (Mechanical Engineering IX)—2 hours. Professor HUTTON

HEAT AND ITS APPLICATIONS (Mechanical Engineering VII)—2 hours, and laboratory practice. Professor HUTTON and Mr. GREGORY

MOTORS (Mechanical Engineering XI)—1 hour. Professor HUTTON

MACHINERY AND MILL WORK (Mechanical Engineering XIII)—2 hours. Mr. WOOLSON

ELECTRICAL ENGINEERING (Electrical Engineering III)—1 hour. Professor CROCKER

ELECTRIC POWER (Electrical Engineering II)—3 hours. Professor CROCKER

THEORY OF ALTERNATORS AND TRANSFORMERS (Mechanics VIII)—3 hours. Professor PUPIN

ELECTRICAL ENGINEERING LABORATORY (Electrical Engineering XI)—8 hours. Mr. FREEDMAN

HYGIENE

DRAWING, PROBLEMS AND DESIGN (in connection with Electrical Engineering II and III)

Second Session

MANAGEMENT OF ENGINES (Mechanical Engineering X)—4 hours. Professor HUTTON

HEAT AND ITS APPLICATIONS (Mechanical Engineering VIII)—2 hours. Professor HUTTON

DYNAMICS OF ENGINEERING (Mechanical Engineering XII)—1 hour. Professor HUTTON

MACHINERY AND MILL WORK (Mechanical Engineering XIII)—2 hours. Mr. WOOLSON

ELECTRICAL ENGINEERING (Electrical Engineering III)—2 hours. Professor CROCKER

ELECTRIC RAILWAY (Electrical Engineering VIII)—2 hours. Mr. SEVER

THEORY OF VARIABLE CURRENTS (Mechanics IX)—2 hours. Professor PUPIN

ADVANCED THEORY OF ELECTRICITY (*optional*) (Mechanics XIV, XV or XVII). Professor PUPIN

ELECTRICAL ENGINEERING LABORATORY (Electrical Engineering XI)—8 hours. Mr. FREEDMAN

HYGIENE

DRAWING, PROBLEMS AND DESIGN (in connection with Electrical Engineering II, III and VIII)

THESIS, original investigation of some Electrical Engineering subject

COURSE IN METALLURGY

First Year

First Session

ALGEBRA (Mathematics V)—4 hours. Professor GOODWIN

TRIGONOMETRY (Mathematics IV)—4 hours. Professor GOODWIN

PHYSICS (Physics I)—3 hours. Professor ROOD and Mr. GORDON

CHEMISTRY (Chemistry I)—3 hours. Professor CHANDLER and Mr. WARD

QUALITATIVE ANALYSIS (Chemistry IX)—4 hours, and 15 hours laboratory.
Dr. WELLS and Dr. CUSHMAN

BLOWPIPE ANALYSIS (Mineralogy I)—1 hour, and 2 afternoons laboratory.
Professor MOSES, Mr. WHITLOCK, and Mr. LUQUER

CRYSTALLOGRAPHY (Mineralogy II)—2 hours. Professor MOSES

DRAWING (Mechanical Engineering I)—1 hour lecture and drawing-room
practice. Mr. MAYER and Mr. PROVOT

SURVEYING (Civil Engineering I)—2 hours. Professor GREENLEAF and Mr.
TUSKA

Second Session

ANALYTICAL GEOMETRY (Mathematics V)—4 hours. Professor GOODWIN

PHYSICS (Physics I)—3 hours. Professor ROOD and Mr. GORDON

CHEMISTRY (Chemistry I)—3 hours. Professor CHANDLER and Mr. WARD

QUALITATIVE ANALYSIS (Chemistry IX)—4 hours, and 15 hours laboratory.
Dr. WELLS and Dr. CUSHMAN

MINERALOGY (Mineralogy III)—2 hours lectures and 1 afternoon laboratory.
Professor MOSES and Mr. LUQUER

DESCRIPTIVE GEOMETRY } (Mechanical Engineering I)—2 hours, and draw-
DRAWING } ing-room practice. Mr. MAYER and Mr. PROVOT

Summer Vacation

SURVEYING (Civil Engineering XIII). Professor GREENLEAF and Mr. FOYÉ

COURSE IN METALLURGY

Second Year

First Session

ANALYTICAL GEOMETRY (Mathematics VIII)—4 hours. Professor VAN AMRINGE

CALCULUS (Mathematics VIII)—4 hours. Professor VAN AMRINGE

PHYSICS (Physics III)—2 hours. Professor HALLOCK

PHYSICAL LABORATORY (Physics III)—2 hours. Professor HALLOCK

APPLIED CHEMISTRY (Chemistry XXIX)—3 hours. Professor CHANDLER

QUANTITATIVE ANALYSIS (Chemistry XIV)—2 hours, and 15 hours laboratory practice. Professor RICKETTS, Mr. BOWEN and Dr. VULTÉ

MINERALOGY (Mineralogy III)—2 hours lectures and 2 afternoons laboratory. Professor MOSES and Mr. LUQUER

EXCAVATION AND TUNNELLING (Mining I)—3 hours. Professor PEELE

GRAPHICS } (Mechanical Engineering I)—2 hours lectures and drawing-room
DRAWING } practice. Mr. MAYER

Second Session

CALCULUS (Mathematics VIII)—4 hours. Professor VAN AMRINGE

PHYSICAL LABORATORY (Physics III)—2 hours. Professor HALLOCK

APPLIED CHEMISTRY (Chemistry XXIX)—3 hours. Professor CHANDLER

QUANTITATIVE ANALYSIS (Chemistry XIV)—2 hours, and 15 hours laboratory practice. Professor RICKETTS, Mr. BOWEN and Dr. VULTÉ

OPTICAL MINERALOGY (Mineralogy VI)—2 hours lectures and 1 afternoon laboratory for 2 months. Mr. LUQUER

LITHOLOGY (Geology V)—2 hours lectures and 1 afternoon laboratory practice for 2 months. Professor KEMP

BORING AND SHAFT SINKING (Mining II)—2 hours. Professor PEELE

MINE SURVEYING (Mining IX)—1 hour. Mr. DURHAM

DRAWING (Mechanical Engineering I)—2 hours lectures and drawing-room practice. Mr. MAYER

Summer Vacation

SURVEYING (Civil Engineering XIV). Professor GREENLEAF and Mr. FOYÉ

COURSE IN METALLURGY

Third Year

First Session

ANALYTICAL MECHANICS (Mechanics I)—3 hours. Professor WOODWARD

QUANTITATIVE ANALYSIS (Chemistry XIV)—2 hours, and 15 hours laboratory practice. Professor RICKETTS, Mr. BOWEN, and Dr. VULTÉ

GEOLOGY (Geology II)—3 hours. Professor KEMP

ENGINEERING (Civil Engineering V)—3 hours. Professor BURR

PROPERTIES OF MATERIALS (Mechanical Engineering V)—2 hours. Professor HUTTON

MINING (Mining III)—4 hours. Professor MUNROE

METALLURGY (Metallurgy I)—5 hours. Professor EGLESTON and Mr. STRUTHERS

DESIGN, PROBLEMS (Civil Engineering V)—Afternoon work. Professor BURR and Mr. FOYÉ

Second Session

ANALYTICAL MECHANICS (Mechanics I)—3 hours. Professor WOODWARD

ASSAYING (Chemistry XXI)—4 hours, and 15 hours laboratory practice. Professor RICKETTS and Mr. MILLER

GEOLOGY (Geology II)—3 hours. Professor KEMP

ENGINEERING (Civil Engineering V)—2 hours. Professor BURR

PROPERTIES OF MATERIALS (Mechanical Engineering VI)—2 hours, and laboratory work. Professor HUTTON, Mr. WOOLSON, and Mr. GREGORY

ELECTRICAL ENGINEERING (Electrical Engineering V)—2 hours. Professor CROCKER

ELECTRICAL ENGINEERING LABORATORY (Electrical Engineering V)—2 hours. Mr. SEVER

ORE DRESSING (Mining IV)—4 hours. Professor MUNROE

METALLURGY (Metallurgy II and III)—5 hours. Professor EGLESTON and Mr. STRUTHERS

DESIGN, PROBLEMS (Civil Engineering V, VI, and VII)—Afternoon work. Professor BURR and Mr. FOYÉ

Summer Vacation

PRACTICAL MINING (Mining XI)—6 weeks. Professor PEELE and Mr. DURHAM

COURSE IN METALLURGY

Fourth Year

First Session

ECONOMIC GEOLOGY (Geology III)—3 hours, lectures and conferences. Professor KEMP

MANAGEMENT OF BOILERS (Mechanical Engineering IX)—2 hours. Professor HUTTON

HEAT AND ITS APPLICATIONS (Mechanical Engineering VII)—2 hours, and laboratory practice. Professor HUTTON and Mr. GREGORY

MINE ENGINEERING (Mining VI)—2 hours. Professor MUNROE

MINE PLANT (Mining VII)—2 hours. Professor PEELE

METALLURGY (Metallurgy IV)—5 hours. Professor EGLESTON and Mr. STRUTHERS

HYGIENE

DRAWING, (in connection with Project)

Second Session

ORE DRESSING (Mining V)—1 afternoon first half of term. Professor MUNROE

ORE TESTING (Chemistry XXIII)—1 afternoon last half of term. Professor RICKETTS and Mr. MILLER

ECONOMIC GEOLOGY (Geology III)—3 hours, lectures and conferences. Professor KEMP

MANAGEMENT OF ENGINES (Mechanical Engineering X)—4 hours. Professor HUTTON

HEAT AND ITS APPLICATIONS (Mechanical Engineering VIII)—2 hours. Professor HUTTON

MINE ENGINEERING (Mining VI)—1 hour. Professor MUNROE

MINE PLANT (Mining VII)—2 hours. Professor PEELE

MINE ADMINISTRATION (Mining X)—1 hour. Professor MUNROE

METALLURGY (Metallurgy IV)—5 hours. Professor EGLESTON and Mr. STRUTHERS

HYGIENE

DRAWING, (in connection with Project)

PROJECT, on some Metallurgical subject approved by the head of the department

COURSE IN GEOLOGY AND PALÆONTOLOGY

First Year

First Session

ALGEBRA (Mathematics V)—4 hours. Professor GOODWIN

TRIGONOMETRY (Mathematics IV)—4 hours. Professor GOODWIN

PHYSICS (Physics I)—3 hours. Professor ROOD and Mr. GORDON

CHEMISTRY (Chemistry I)—3 hours. Professor CHANDLER and Mr. WARD

QUALITATIVE ANALYSIS (Chemistry IX)—4 hours, and 15 hours laboratory.
Dr. WELLS and Dr. CUSHMAN

BOTANY (Botany III)—1 hour. Professor BRITTON

BLOWPIPE ANALYSIS (Mineralogy I)—1 hour, 2 afternoons laboratory. Professor MOSES, Mr. WHITLOCK, and Mr. LUQUER

CRYSTALLOGRAPHY (Mineralogy II)—2 hours. Professor MOSES

DRAWING (Mechanical Engineering I)—1 hour lecture and drawing-room practice. Mr. MAYER and Mr. PROVOT

SURVEYING (Civil Engineering I)—2 hours. Professor GREENLEAF and Mr. TUSKA

Second Session

ANALYTICAL GEOMETRY (Mathematics V)—4 hours. Professor GOODWIN

PHYSICS (Physics I)—3 hours. Professor ROOD and Mr. GORDON

CHEMISTRY (Chemistry I)—3 hours. Professor CHANDLER and Mr. WARD

QUALITATIVE ANALYSIS (Chemistry IX)—4 hours, and 15 hours laboratory.
Dr. WELLS and Dr. CUSHMAN

BOTANY (Botany III)—1 hour. Professor BRITTON

MINERALOGY (Mineralogy III)—2 hours lectures and 1 afternoon laboratory. Professor MOSES and Mr. LUQUER

DESCRIPTIVE GEOMETRY } (Mechanical Engineering I)—2 hours, and draw-
DRAWING } ing-room practice. Mr. MAYER and Mr. PROVOT

Summer Vacation

SURVEYING (Civil Engineering XIII). Professor GREENLEAF and Mr. FOYÉ

COURSE IN GEOLOGY AND PALÆONTOLOGY

Second Year

First Session

PHYSICS (Physics III)—2 hours. Professor HALLOCK

PHYSICAL LABORATORY (Physics III)—2 hours. Professor HALLOCK

APPLIED CHEMISTRY (Chemistry XXIX)—3 hours. Professor CHANDLER

BIOLOGY, ZOÖLOGY (Biology I)—1 hour. Dr. DEAN

BOTANY (Botany IV)—2 hours laboratory. Dr. CURTIS

MINERALOGY (Mineralogy III)—2 hours lectures and 2 afternoons laboratory.
Professor MOSES and Mr. LUQUER

EXCAVATION AND TUNNELLING (Mining I)—3 hours. Professor PEELE

MICROSCOPY (Chemistry XXXI)—2 exercises, 2 hours each. Dr. JULIEN

PENCIL AND BRUSH DRAWING, FOSSILS. Mr. HOLLICK

Second Session

PHYSICAL LABORATORY (Physics III)—2 hours. Professor HALLOCK

APPLIED CHEMISTRY (Chemistry XXIX)—3 hours. Professor CHANDLER

BIOLOGY, ZOÖLOGY (Biology I)—1 hour. Dr. DEAN

BOTANY (Botany IV)—2 hours laboratory. Dr. CURTIS

OPTICAL MINERALOGY (Mineralogy VI)—2 hours lectures and 1 afternoon
laboratory for 2 months. Mr. LUQUER

LITHOLOGY (Geology V)—2 hours lectures and 1 afternoon laboratory for 2
months. Professor KEMP

BORING AND SHAFT SINKING (Mining II)—2 hours. Professor PEELE

MINE SURVEYING (Mining IX)—1 hour. Mr. DURHAM

MICROSCOPY (Chemistry XXXI)—2 exercises, 2 hours each. Dr. JULIEN

PENCIL AND BRUSH DRAWING, FOSSILS. Mr. HOLLICK

Summer Vacation

SURVEYING (Civil Engineering XIV). Professor GREENLEAF and Mr. FOYÉ

COURSE IN GEOLOGY AND PALÆONTOLOGY

Third Year

First Session

ASSAYING (Chemistry XXI)—4 hours, and 15 hours laboratory practice. Professor RICKETTS and Mr. MILLER

GEOLOGY (Geology II)—3 hours. Professor KEMP

PALÆONTOLOGY (Geology VII)—2 hours, and 4 hours laboratory. Mr. HOLLICK

BOTANY (Botany V)—4 hours laboratory. Professor BRITTON

BIOLOGY, ZOÖLOGY (Biology I A)—1 hour. Dr. DEAN

OPTICAL MINERALOGY AND CRYSTALLOGRAPHY (Mineralogy VII)—3 hours. Professor MOSES and Mr. LUQUER

MINING (Mining III)—4 hours. Professor MUNROE

METALLURGY (Metallurgy I)—4 hours. Professor EGGLESTON and Mr. STRUTHERS

MICROBIOLOGY (Chemistry XXXVII)—2 exercises in laboratory, 2 hours each. Dr. JULIEN

DRAWING (Geological maps, sections and specimens). Mr. HOLLICK

Second Session

GEOLOGY (Geology II)—3 hours. Professor KEMP

PALÆONTOLOGY (Geology VII)—2 hours, and 4 hours laboratory. Mr. HOLLICK

BOTANY (Botany V)—4 hours laboratory. Professor BRITTON

BIOLOGY, ZOÖLOGY (Biology I A)—1 hour. Dr. DEAN

OPTICAL MINERALOGY AND CRYSTALLOGRAPHY (Mineralogy VII)—3 hours. Professor MOSES and Mr. LUQUER

ORE DRESSING (Mining IV)—4 hours. Professor MUNROE

METALLURGY (Metallurgy II and III)—4 hours. Professor EGGLESTON and Mr. STRUTHERS

MICROBIOLOGY (Chemistry XXXVII)—2 exercises in laboratory, 2 hours each. Dr. JULIEN

DRAWING (Geological maps, sections, and specimens). Mr. HOLLICK

Summer Vacation

MEMOIR

COURSE IN GEOLOGY AND PALÆONTOLOGY

Fourth Year

First Session

QUANTITATIVE ANALYSIS (Chemistry XV)—2 hours, and 15 hours laboratory practice. Professor RICKETTS, Mr. BOWEN, and Dr. VULTÉ

PALÆONTOLOGY (Geology VII)—2 hours lectures and 4 hours laboratory. Mr. HOLLICK

BOTANY (Botany VI)—1 hour. Professor BRITTON

BIOLOGY, ZOÖLOGY (Biology I B)—1 hour. Dr. DEAN

PETROGRAPHY (Geology VI)—2 hours lectures and 4 hours laboratory. Professor KEMP

ECONOMIC GEOLOGY (Geology III)—3 hours, lectures and conferences. Professor KEMP

METALLURGY (Metallurgy IV)—4 hours. Professor EGGLESTON and Mr. STRUTHERS

HYGIENE

DRAWING (in connection with Memoir and Thesis). Mr. HOLLICK

Second Session

QUANTITATIVE ANALYSIS (Chemistry XV)—2 hours, and 15 hours laboratory practice. Professor RICKETTS, Mr. BOWEN, and Dr. VULTÉ

ORE TESTING (Chemistry XXIII)—1 afternoon last half of term. Professor RICKETTS

PALÆONTOLOGY (Geology VII)—2 hours lectures and 4 hours laboratory. Mr. HOLLICK

BOTANY (Botany VI)—1 hour. Professor BRITTON

BIOLOGY, ZOÖLOGY (Biology I B)—1 hour. Dr. DEAN

PETROGRAPHY (Geology VI)—2 hours lectures and 4 hours laboratory. Professor KEMP

ECONOMIC GEOLOGY (Geology III)—3 hours, lectures and conferences. Professor KEMP

METALLURGY (Metallurgy IV)—4 hours. Professor EGGLESTON and Mr. STRUTHERS

HYGIENE

DRAWING (in connection with Memoir and Thesis). Mr. HOLLICK

THESIS, on some Geological subject approved by the head of the department

COURSE IN ANALYTICAL AND APPLIED CHEMISTRY

First Year

First Session

ALGEBRA (Mathematics V)—4 hours. Professor GOODWIN

TRIGONOMETRY (Mathematics IV)—4 hours. Professor GOODWIN

PHYSICS (Physics I)—3 hours. Professor ROOD and Mr. GORDON

CHEMISTRY (Chemistry I)—3 hours. Professor CHANDLER and Mr. WARD

CHEMICAL PHYSICS (Chemistry III)—2 hours. Dr. WIECHMANN

QUALITATIVE ANALYSIS (Chemistry IX)—4 hours, and 15 hours laboratory.
Dr. WELLS and Dr. CUSHMAN

BOTANY (Botany III)—1 hour. Professor BRITTON

BLOWPIPE ANALYSIS (Mineralogy I)—1 hour, and 2 afternoons laboratory.
Professor MOSES, Mr. WHITLOCK and Mr. LUQUER

CRYSTALLOGRAPHY (Mineralogy II)—2 hours. Professor MOSES

DRAWING (Mechanical Engineering I)—1 hour lecture and drawing-room
practice. Mr. MAYER and Mr. PROVOT

Second Session

ANALYTICAL GEOMETRY (Mathematics V)—4 hours. Professor GOODWIN

PHYSICS (Physics I)—3 hours. Professor ROOD and Mr. GORDON

CHEMISTRY (Chemistry I)—3 hours. Professor CHANDLER and Mr. WARD

STOICHIOMETRY (Chemistry IV)—2 hours. Dr. WIECHMANN

QUALITATIVE ANALYSIS (Chemistry IX)—4 hours, and 15 hours laboratory.
Dr. WELLS and Dr. CUSHMAN

BOTANY (Botany III)—1 hour. Professor BRITTON

MINERALOGY (Mineralogy III)—2 hours lectures and 1 afternoon laboratory.
Professor MOSES and Mr. LUQUER

DRAWING (Mechanical Engineering I)—1 hour lecture and drawing-room
practice. Mr. MAYER and Mr. PROVOT

Summer Vacation

MEMOIR

COURSE IN ANALYTICAL AND APPLIED CHEMISTRY

Second Year

First Session

PHYSICS (Physics III)—2 hours. Professor HALLOCK

PHYSICAL LABORATORY (Physics III)—2 hours. Professor HALLOCK

APPLIED CHEMISTRY (Chemistry XXIX)—3 hours. Professor CHANDLER

CHEMICAL PHILOSOPHY (Chemistry V)—2 hours. Dr. WIECHMANN

QUANTITATIVE ANALYSIS (Chemistry XIII)—4 hours, and 15 hours laboratory practice. Professor RICKETTS, Mr. BOWEN, and Dr. VULTÉ

BIOLOGY, ZOÖLOGY (Biology I)—1 hour. Dr. DEAN

MINERALOGY (Mineralogy III)—2 hours lectures and 2 afternoons laboratory. Professor MOSES and Mr. LUQUER

MICROSCOPY (Chemistry XXXI)—2 exercises, 2 hours each. Dr. JULIEN

Second Session

PHYSICAL LABORATORY (Physics III)—2 hours. Professor HALLOCK

APPLIED CHEMISTRY (Chemistry XXIX)—3 hours. Professor CHANDLER

CHEMICAL PHILOSOPHY (Chemistry V)—2 hours. Dr. WIECHMANN

QUANTITATIVE ANALYSIS (Chemistry XIII)—4 hours, and 15 hours laboratory practice. Professor RICKETTS, Mr. BOWEN, and Dr. VULTÉ

BIOLOGY, ZOÖLOGY (Biology I)—1 hour. Dr. DEAN

OPTICAL MINERALOGY (Mineralogy VI)—2 hours lectures and 1 afternoon laboratory for 2 months. Mr. LUQUER

MICROSCOPY (Chemistry XXXI)—2 exercises, 2 hours each. Dr. JULIEN

Summer Vacation

MEMOIR

COURSE IN ANALYTICAL AND APPLIED CHEMISTRY

Third Year

First Session

APPLIED CHEMISTRY (Chemistry XXX)—3 hours. Professor CHANDLER and Mr. PELLEW

QUANTITATIVE ANALYSIS (Chemistry XIII)—4 hours, and 15 hours laboratory practice. Professor RICKETTS, Mr. BOWEN, and Dr. VULTÉ

GEOLOGY (Geology II)—3 hours. Professor KEMP

METALLURGY (Metallurgy I)—4 hours. Professor EGLESTON and Mr. STRUTHERS

MICROBIOLOGY (Chemistry XXXVII)—2 exercises in laboratory, 2 hours each. Dr. JULIEN

Second Session

APPLIED CHEMISTRY (Chemistry XXX)—3 hours. Professor CHANDLER and Mr. PELLEW

ASSAYING (Chemistry XXI)—4 hours, and 15 hours laboratory practice. Professor RICKETTS and Mr. MILLER

PREPARATION OF INORGANIC COMPOUNDS (Chemistry VII)—5 afternoons and 1 conference last half of the session. Dr. VULTÉ and Mr. WARD.

GEOLOGY (Geology II)—3 hours. Professor KEMP

METALLURGY (Metallurgy II and III)—4 hours. Professor EGLESTON and Mr. STRUTHERS

MICROBIOLOGY (Chemistry XXXVII)—2 exercises in laboratory, 2 hours each. Dr. JULIEN

DRAWING (Mechanical Engineering II)—1 afternoon drawing-room practice Mr. MAYER and Mr. PROVOT

Summer Vacation

MEMOIR

COURSE IN ANALYTICAL AND APPLIED CHEMISTRY

Fourth Year

First Session

APPLIED CHEMISTRY (Chemistry XXX)—4 hours. Professor CHANDLER and Mr. PELLEW

ORGANIC CHEMISTRY (Chemistry XXV)—6 hours lectures and recitations and 15 hours laboratory practice. Professor COLBY and Mr. WARD

ECONOMIC GEOLOGY (Geology III)—3 hours, lectures and conferences. Professor KEMP

METALLURGY (Metallurgy IV)—4 hours. Professor EGLESTON and Mr. STRUTHERS

HYGIENE

Second Session

APPLIED CHEMISTRY (Chemistry XXX)—4 hours. Professor CHANDLER and Mr. PELLEW

ORGANIC CHEMISTRY (Chemistry XXV)—6 hours lectures and recitations and 15 hours laboratory practice. Professor COLBY and Mr. WARD

ECONOMIC GEOLOGY (Geology III)—3 hours, lectures and conferences. Professor KEMP

METALLURGY (Metallurgy IV)—4 hours. Professor EGLESTON and Mr. STRUTHERS

HYGIENE

THESIS, on some Chemical subject approved by the head of the department.

COURSE IN ARCHITECTURE

First Year

First Session

TRIGONOMETRY, ANALYTICAL } (Mathematics VI)—2 hours. Professor
ANALYTICAL GEOMETRY } GOODWIN

PHYSICS (Physics I)—3 hours. Professor ROOD and Mr. GORDON

CHEMISTRY (Chemistry I)—3 hours. Professor CHANDLER and Mr. WARD

ANCIENT ARCHITECTURAL HISTORY (Architecture I)—2 hours. Mr. KRESS

HISTORY OF ANCIENT ORNAMENT (Architecture V)—1 hour. Professor
HAMLIN

PRACTICE, SPECIFICATIONS (Architecture XIII)—1 hour. Mr. WARREN

PROJECTIONS, SHADES AND SHADOWS (Architecture X)—1 hour. Professor
SHERMAN

DRAWING, FREEHAND AND ARCHITECTURAL (Architecture IX, A and C)—15
hours. Professor WARE and Mr. HARRIMAN

HISTORICAL DRAWING (Architecture IX B)—1 hour. Mr. KRESS

SURVEYING (*optional*) (Civil Engineering I)—2 hours. Professor GREENLEAF
and Mr. TUSKA

Second Session

CALCULUS (Mathematics VII)—2 hours. Professor GOODWIN

PHYSICS (Physics I)—3 hours. Professor ROOD and Mr. GORDON

CHEMISTRY (Chemistry I)—3 hours. Professor CHANDLER and Mr. WARD

ANCIENT ARCHITECTURAL HISTORY (Architecture I)—2 hours. Mr. KRESS

HISTORY OF ANCIENT ORNAMENT (Architecture V)—1 hour. Professor
HAMLIN

PRACTICE, SPECIFICATIONS (Architecture XIII)—1 hour. Mr. WARREN

ELEMENTS OF ARCHITECTURE (Architecture VIII)—2 hours. Professor
SHERMAN

DRAWING, FREEHAND AND ARCHITECTURAL (Architecture IX, A and C)—
15 hours. Professor WARE and Mr. HARRIMAN

HISTORICAL DRAWING (Architecture IX B)—1 hour. Mr. KRESS

Summer Vacation

SURVEYING (*optional*) (Civil Engineering XIII)—Professor GREENLEAF and
Mr. FOYÉ

MEMOIR

COURSE IN ARCHITECTURE

Second Year

First Session

APPLIED CHEMISTRY (Chemistry XXIX)—3 hours. Professor CHANDLER

PERSPECTIVE (Architecture XI)—2 hours, December and January. Professor WARE

ARCHITECTURAL ENGINEERING (Architecture XIV)—2 hours. Professor SHERMAN

MEDIÆVAL ARCHITECTURAL HISTORY (Architecture II)—2 hours. Professor WARE

ARCHÆOLOGY, FRENCH (Architecture XVI)—2 hours. Mr. KRESS

HISTORY OF MEDIÆVAL ORNAMENT (Architecture VI)—1 hour. Professor HAMLIN

THEORY OF FORM (Architecture IV)—1 hour. Professor WARE

PRACTICE, SPECIFICATIONS (Architecture XIII)—1 hour. Mr. WARREN

DESIGN, PROBLEMS (Architecture XV)—15 hours. Professor SHERMAN

DRAWING, FREEHAND (Architecture IX C)—2 hours. Professor HAMLIN and Mr. WARREN

Second Session

APPLIED CHEMISTRY (Chemistry XXIX)—3 hours. Professor CHANDLER

ARCHITECTURAL ENGINEERING (Architecture XIV)—2 hours. Professor SHERMAN

MEDIÆVAL ARCHITECTURAL HISTORY (Architecture II)—2 hours lectures and 12 hours research. Professor WARE

ARCHÆOLOGY, FRENCH (Architecture XVI)—2 hours. Mr. KRESS

HISTORY OF MEDIÆVAL ORNAMENT (Architecture VI)—1 hour. Professor HAMLIN

DECORATIVE ARTS (Architecture IV)—1 hour. Professor WARE

PRACTICE, SPECIFICATIONS (Architecture XIII)—1 hour. Mr. WARREN

HISTORICAL DESIGN (Architecture II and XV)—3 hours. Professor WARE

DRAWING, FREEHAND (Architecture IX C)—2 hours. Professor HAMLIN and Mr. WARREN

Summer Vacation

SURVEYING (*optional*) (Civil Engineering XIV). Professor GREENLEAF and Mr. FOYÉ

MEMOIR

COURSE IN ARCHITECTURE

Third Year

First Session

GEOLOGY (Geology IV)—2 hours. Mr. HOLLICK, with ten introductory lectures by Professor Moses on Common Minerals (Mineralogy V)

SANITARY ENGINEERING (Civil Engineering II)—1 hour. Professor GREENLEAF

ARCHITECTURAL ENGINEERING (Architecture XIV)—2 hours. Mr. SNELLING

MEDLÆVAL ARCHITECTURAL HISTORY (Architecture II)—2 hours. Professor WARE

HISTORY OF MEDLÆVAL ORNAMENT (Architecture VI)—1 hour. Professor HAMLIN

THEORY OF FORM (Architecture IV)—1 hour. Professor WARE

PRACTICE, SPECIFICATIONS (Architecture XIII)—1 hour. Mr. WARREN

DESIGN, PROBLEMS (Architecture XV)—15 hours. Mr. SNELLING

DRAWING, FREEHAND (Architecture IX C)—2 hours. Professor HAMLIN

Second Session

ECONOMIC GEOLOGY OF BUILDING STONES (Geology III)—3 hours for one month. Professor KEMP

SANITARY ENGINEERING (Civil Engineering II)—1 hour. Professor GREENLEAF

ARCHITECTURAL ENGINEERING (Architecture XIV)—2 hours. Mr. SNELLING

MEDLÆVAL ARCHITECTURAL HISTORY (Architecture II)—2 hours lectures and 12 hours research. Professor WARE

HISTORY OF MEDLÆVAL ORNAMENT (Architecture VI)—1 hour. Professor HAMLIN

DECORATIVE ARTS (Architecture IV)—1 hour. Professor WARE

PRACTICE, SPECIFICATIONS (Architecture XIII)—1 hour. Mr. WARREN

HISTORICAL DESIGN (Architecture II and XV)—3 hours. Professor WARE

DRAWING, FREEHAND (Architecture IX C)—1 hour. Professor HAMLIN

Summer Vacation

MEMOIR

COURSE IN ARCHITECTURE

Fourth Year

First Session

ADVANCED ARCHITECTURAL ENGINEERING AND PRACTICE (Architecture XIX)—6 hours lectures and 15 hours practice. Mr. SNELLING and Mr. WARREN

ADVANCED ARCHITECTURAL HISTORY (Architecture XVII)—2 hours recitation. Professor WARE

ADVANCED ARCHITECTURAL DESIGN (Architecture XVIII)—15 hours. Professor HAMLIN

THEORY OF FORM (Architecture IV)—1 hour. Professor WARE

PRACTICE, SPECIFICATIONS (Architecture XIII)—1 hour. Mr. WARREN

DESCRIPTIVE GEOMETRY (Architecture XII)—2 hours. Professor SHERMAN

DESIGN, PROBLEMS (Architecture XV)—15 hours. Professor HAMLIN

DRAWING, FIGURE AND ORNAMENT (Architecture IX C)—1 hour. Professor HAMLIN

Second Session

ADVANCED ARCHITECTURAL ENGINEERING AND PRACTICE (Architecture XIX)—6 hours lectures and 15 hours practice. Mr. SNELLING and Mr. WARREN

ADVANCED ARCHITECTURAL HISTORY (Architecture XVII)—2 hours recitation. Professor WARE

ADVANCED ARCHITECTURAL DESIGN (Architecture XVIII)—15 hours. Professor HAMLIN

DECORATIVE ARTS (Architecture IV)—1 hour. Professor WARE

PRACTICE, SPECIFICATIONS (Architecture XIII)—1 hour. Mr. WARREN

DESIGN, PROBLEMS (Architecture XV)—15 hours. Professor HAMLIN

STEREOTOMY (Architecture XII)—2 hours. Professor SHERMAN

DRAWING, FIGURE AND ORNAMENT (Architecture IX C)—1 hour. Professor HAMLIN

THESIS, original design or investigation and construction of some Architectural subject.

BY-LAWS

1 At the beginning of the first year each student must elect which of the seven courses he intends to pursue, and must thenceforth abide by his election unless permitted by the faculty to make a change.

2 No student is allowed to pursue more than one course at a time.

Admission

3 Candidates for admission to the first class, at its formation, must be of the age of *eighteen years*, complete ; and for admission to advanced standing there will be required a corresponding increase of age ; but this rule may be dispensed with when, in the opinion of the Faculty, there are sufficient reasons to justify its relaxation.

Enrolment and Certificates

4 An applicant for admission must file with the Dean of the School of Mines, at least one week before the day fixed for the entrance examinations, a certificate from his principal instructor containing a definite statement of the subjects which he is qualified to offer for examination. No student will be examined in June, 1894, whose name is not enrolled and whose certificate is not filed on or before Monday, May 28 of the same year ; nor will any student be examined in September, 1894, whose name is not enrolled and whose certificate is not filed on or before Wednesday, September 19. Blank forms of the certificate required can be had upon application to the Registrar of the School of Mines. In the case of students expecting to be examined at a distance from the College, the names must be enrolled and the certificates filed one week earlier.

5 Every candidate must, before admission, present a certificate of good moral character from his last teacher, or from some citizen in good standing, and students from other colleges must bring certificates from those colleges of honorable dismission.

Entrance Examinations

6 Candidates for the first class must pass satisfactory examinations in :

Mathematics :

Arithmetic, including the metric system of weights and measures.

Algebra, on the fundamental operations, greatest common divisor and least common multiple, fractions, equations of the first degree, formation of powers, extraction of roots, radicals, equations of the second degree, ratio, proportion, and series.

Geometry, plane, solid, and spherical geometry.

Plane trigonometry, on the use of tables of logarithms of numbers and of logarithms of trigonometric functions, solution of right-angled and of oblique-angled plane triangles.

Physics :

On the equivalent of Ganot's smaller treatise (Peck's Ganot's Natural Philosophy).

Chemistry :

On the non-metallic elements and their important compounds with each other, as given in the ordinary high-school text-books.

English :

Grammar (Whitney's Essentials of English Grammar indicates the field to be covered).

Composition—The candidate will be required to write an essay of at least two hundred and fifty words, based upon some subject taken from one of the four works in English literature prescribed for the year. The essay must be written during the examination, and will be judged with reference to spelling, punctuation, grammar, division by paragraphs, and expression.

For 1894, the works prescribed—all of which the candidate will be expected to have read—are :

Shakspeare's Merchant of Venice, Scott's Lady of the Lake, The Sir Roger de Coverley Papers in the Spectator, and Irving's Sketch-Book.

For 1895 the works prescribed are :

Shakspeare's Twelfth Night, Milton's L'Allegro and Il Penseroso, Longfellow's Evangeline, and Macaulay's Essays on Milton and Addison.

For 1896, the works prescribed are :

Shakspeare's Merchant of Venice, Milton's L'Allegro and Il Penseroso, Longfellow's Evangeline, Macaulay's Essay on Milton and Webster's first Bunker Hill Oration.

French :

The elements of French grammar,

The ability to read easy French, such as Rambaud's Petite Histoire de la Civilisation Française.

The admission examination in French is divided into two parts designed to test, respectively, (1st) the ability of the applicant to read at sight French prose of ordinary difficulty, (2d) his knowledge of elementary grammar.

The ability to read ordinary French prose will be acquired, it is believed, by the reading, in addition to the study of grammar, of three hundred or more 12mo pages of French. It is recommended that the reading be divided between historical narrative and popular works on science, including the names of most of the articles in daily use ; a few very simple descriptive passages may also be included. Although no work is prescribed, the attention of teachers in preparatory schools is called to Alfred Rambaud's Petite Histoire de la Civilisation Française (Paris, A. Colin) and Louis Figuier's Les Grandes Inventions (Paris, Hachette).

By knowledge of elementary grammar is meant knowledge of the paradigms, including the four conjugations of regular verbs, as well as the most frequently used irregular verbs and those belonging to the same classes as *sentir*, *paraître*, *craindre*, etc.; knowledge of elementary syntax, including the place of personal pronouns when used as direct or indirect objects. This knowledge may be tested as well by translation in French of very simple English sentences as by direct questioning.

The following grammatical nomenclature will be adhered to on the examination papers:—Article: definite, indefinite, and partitive. Noun: common, proper. Adjective: qualifying and determinative, the latter including demonstrative, possessive, numeral, indefinite, and interrogative. Pronoun: personal, demonstrative, possessive, indefinite, relative, and interrogative; Verbs: auxiliary, regular, irregular, and impersonal; active and passive; transitive and intransitive. Adverbs of quantity, time, place, and manner. Prepositions. Conjunctions. Interjections. For the moods and tenses of verbs the following will be adhered to: Indicative: simple tenses—present, imperfect, future, past definite or preterite; compound tenses—past indefinite, pluperfect, future anterior, past anterior. Subjunctive: simple tenses—present, imperfect; compound tenses—past, pluperfect. Conditional: present, past. Imperative: present, past. Infinitive: present, past. Participle: present, past.

The preparation for the examination, if spread over two years, ought to occupy no less than three weekly recitations of one hour each; good results might be obtained in one year with daily recitations of forty-five minutes each.

The teachers in preparatory schools will greatly help the work of the College if they will bear in mind that definite knowledge is what is required, and not merely acquaintance with the forms of the language. A firm grasp of the most important rules and most constant forms will be found much more useful than the knowledge of some curious exception. Pronunciation, although it cannot be tested at the entrance examination, which is wholly in writing, must not be neglected. Applicants ought to be able to read aloud intelligibly what they are expected to be able to translate.

The use of good English is expected on the part of the candidates on their examination books, whether in answers to direct questions or in translations from French to English.

Only candidates coming for their *full* or *final* entrance examination can present French. It cannot be presented in the *preliminary* examination.

The object of the admission requirement in French is to secure for the students in the School of Mines ability to use readily French authorities on the subjects taught in the school. Scientific works in French will have to be read wholly or in part by every student from the first year on.

German :

The elements of German grammar.

The ability to read easy German, such as Andersen's or Grimm's Märchen.

The object of the entrance examination in German is to determine whether the candidate has a sufficient knowledge of grammar, vocabulary, and idiom, to

read easy German prose at sight. Andersen's and Grimm's Märchen are suggested merely to indicate the grade of work; any easy stories or plays can be used in preparation with equally good results.

An adequate preparation for this examination ought to extend over two years, with three recitations a week, at the ordinary pace of school work.

Instruction in grammar should be thorough with regard to the ordinary paradigms and everyday constructions; and the ordinary connective words—auxiliaries, prepositions, conjunctions, etc.—should be learned early and thoroughly. But grammar drill should, after the first introductory lessons, follow rather than precede abundant practice in reading. Pupils should prepare lessons of suitable length from a text, and be held to strict account, not only for the vocabulary, but also for the grammatical points in the lesson. At least 100 pages should be covered in this careful way in the course of preparation. Besides this kind of work, the pupils should have daily practice in translation at sight, and should read in that way not less than 200 pages.

It is recommended that the required preparation in German as set forth above should be supplemented by the reading of Gore's German Science Reader.

History :

On the equivalent of Johnston's History of the United States.

Free-hand Drawing :

Including the ability to sketch, both in outline and with proper shading, ordinary objects, such as a house, a simple piece of machinery, a piece of flat ornament from a copy, a group of geometrical solids. Each applicant must execute the required drawings in the presence of the examining officer. No certificates of drawings made elsewhere are accepted.

7 Entrance examinations will be held at the College, and for the convenience of candidates for admission residing at a distance from New York, at other principal cities, on Monday of the week next preceding the annual commencement in June and days following (June 4, 1894), and on Wednesday, and the days following, of the second week next preceding the first Monday in October (September 19, 1894), and, by permission of the Faculty on suitable application, at any time during the session.

8 The applicant may present himself in a portion of the subjects in May and complete his examinations in September of the same year. But no examination for admission will be allowed to stand to the credit of an applicant for a period longer than sixteen months.

Preliminary Examinations

9 An applicant duly enrolled, who has filed the required certificate from his principal teacher, may, at the appointed examination time in May or June of the year preceding his admission into the first class, but not at any other time, be examined on certain portions of the foregoing subjects. Such an

applicant may offer at the preliminary examination all subjects required for admission *except*

In algebra, equations of the second degree and beyond.

In geometry, solid and spherical geometry.

In trigonometry, solution of right-angled and oblique-angled plane triangles.

French.

German.

Diplomas and Certificates in Lieu of Examination

10 Diplomas and certificates of other colleges and schools of science will be accepted in lieu of examination, *if satisfactory to the examining officers*. Each examining officer decides the question for his special department. No certificates in lieu of examinations will be accepted, except those of degree-granting institutions, including the Regents of the University of the State of New York.

11 The Committee of the Faculty on Admissions and Examinations will decide, and report to the Dean, within twelve days after the conclusion of the examination, which candidates have been admitted, which have been admitted conditionally, and which have been rejected.

12 Students deficient in minor studies may be admitted conditionally ; each case being considered on its merits by the Committee on Admissions. Students admitted conditionally at the beginning of the academic year must satisfy all conditions in the week following the Christmas vacation, unless, for reasons of weight, the time be extended by the Faculty. Students who fail to satisfy their entrance conditions within the time specified will be dropped from the roll.

13 The Committee of the Faculty on Admissions and Examinations have jurisdiction over all questions arising under the rules relating to entrance examinations.

Advanced Standing

14 Candidates for advanced standing must pass a satisfactory examination upon the studies named above, and also upon those pursued by the class up to the time at which they propose to enter.

15 No candidates are admitted later in the course than the beginning of the fourth year.

Attendance

16 Prompt attendance is required upon all the exercises of the school. Each instance of tardiness will be counted as half an absence.

17 Attendance during all the hours specified on the scheme of attendance adopted by the Faculty is obligatory.

18 Any student who shall have been absent from more than ten per cent. of the exercises in any subject, shall not be entitled to examination in that subject.

19 If any student be absent from more than one third of the lectures, recitations, or exercises in the laboratory or drawing academy in any department, no excuse whatever will be accepted, and he will not be allowed to attend the regular examination in that department.

20 When a student is debarred from attending an examination on account of excessive absences, said debar shall be counted as a failure to pass the examination.

21 Any student who, being present at the school, shall absent himself from any exercise, or shall leave the grounds during the hours at which his attendance is due, shall be liable to removal from the roll of his class.

22 Students are required to attend all the exercises and pass all the examinations of the class and course to which they belong unless specially excused by vote of the Faculty

23 By special permission of the Faculty, students may attend exercises not required in the class or course to which they belong, provided that such attendance does not interfere with the required exercises of their class and course. Such students are held to the same rules of attendance and examination in the extra studies as in the required studies of their class and course.

24 Students who obtain on examination in advance a mark of *eight* or more in any subject may be excused from attendance upon the exercises in that subject. This rule does not apply to students who repeat the studies of any year under by-law 28. Reports of such standing must be filed with the Dean of the Faculty, who alone is authorized to excuse students from attendance.

25 Any student who shall have passed a satisfactory examination in the School of Arts of Columbia College in any study forming a part of the regular course in the School of Mines, will not be required to pursue that study in the school.

Examinations

26 Examinations will be held at the end of the first term (semi-annual), or at the end of the year (annual), on all subjects taught in the school.

27 Any student found guilty of fraudulent practices at examination will be summarily dismissed from the school.

28 Any student who shall fail to pass in any of his studies at the regular semi-annual or annual examination, may present himself for a second examination at the end of the summer vacation; failing to pass in this second examination, his name will be dropped from the roll of his class, and he will not be permitted to attend any of the exercises of said class, except by special permission first obtained from the President: but he may enter the succeeding class and pursue all of its exercises and present himself with that class for examination in all subjects; upon failing a third time in any study, his name will be dropped from the roll of the school.

29 Absence from a regular semi-annual or annual examination, unless excused by the Faculty, will be counted a failure to pass that examination. This rule shall apply to examinations for delinquents held at the end of the summer vacation.

30 Special examinations will not be granted to students who fail at the regular examinations ; but they may present themselves at the time of the next regular examinations.

31 Examinations at times other than here designated are not held except by order of the Faculty.

32 Deficient students of the first, second, or third years will not be allowed to attend any summer school without special permission of the Faculty.

33 No student is entitled to a degree until he has passed satisfactory examinations in all the studies of the course in which he desires to graduate.

34 When a student fails to receive his degree with his class, and returns at some later period to present himself for examination for the same, he will be required to comply with all the requirements at the later date, and the same rule shall apply to students who have received one degree and make application for another.

Standing

35 Every officer keeps a record of the scholarship of each student.

36 The maximum mark is ten in each department, and six is required to pass a student.

Special Students

37 Graduates of the School of Mines, and of other institutions of like grade and standing, may pursue any subjects taught in the school for which they are properly qualified.

38 Permission to pursue special courses is sometimes given, for reasons of weight, to persons of mature age who are not graduates, but special students are not desired in the regular professional courses.

The Laboratories and Drawing Academies

39 No student will be allowed in a laboratory or a drawing academy at a time when his attendance there is not due. During hours assigned for practical work in each of the laboratories, and in the drawing academies, the attendance of students will be required. A record of the daily attendance and of the progress of each student will be kept by the officer in charge.

40 The attendance of students of the first and second years in the drawing-room at such times as they are not engaged at lectures, between 9.30 A.M. and 1.30 P.M., is obligatory for students in engineering and architecture, for such hours and times as may be selected by the professors of engineering and architecture.

Order

41 Good order and gentlemanly deportment are required of all students, as a condition of attendance upon the exercises of the school.

42 Smoking is prohibited in the College buildings.

Excursions and Summer Schools

During the session, the students may visit the different machine shops, electrical and metallurgical establishments of the city and its environs.

During the summer vacations memoirs, on subjects which will be assigned, are required of students as follows : of students in the courses of electrical engineering, of analytical and applied chemistry, and of architecture, at the close of the first, second, and third years ; of students in the course of geology and palæontology at the close of the third year. The time specified for the completion and handing in of the memoirs in chemistry is November 1st of each year, and for other memoirs and summer work the time specified is the second Monday in October.

During the third year students in the courses of engineering may join a volunteer class in practical mechanical engineering under the supervision of the professor of mechanical engineering.

During the latter part of the vacations following the close of the first and second years, students in the courses of mining and civil engineering, metallurgy, and geology are required to join the summer class in surveying under the direction of the adjunct professor of civil engineering.

During the vacation following the close of the third year, students in the courses of mining engineering and metallurgy are required to visit the mines and engage in actual work or study under the superintendence of the adjunct professor of mining.

During the latter part of the vacation following the close of the third year, students in the courses of mining and civil engineering are required to attend a class in railroad surveying for a period of three weeks. The class is under the direction of the adjunct professor of civil engineering.

During the vacation following the close of the third year, students in the course of civil engineering are required to attend a summer class in geodesy for six weeks. The class is under the supervision of the professor of astronomy.

NOTE.—To render unnecessary many inquiries addressed to the registrar, it is here stated that there are no dormitories attached to the school.

PART II

GRADUATE COURSE IN SANITARY ENGINEERING

The full course for the degree of Sanitary Engineer occupies two years.

The instruction is arranged as follows :

THE GENERAL PRINCIPLES OF HYGIENE—causes of diseases, modes of determining their presence and of preventing and destroying them ; bacteriology ; organization and duties of health authorities ; sanitary jurisprudence.

ORGANIC CHEMISTRY—general principles and methods of analysis.

WATER SUPPLY—rainfall, flow of streams, storage of water, quantity required for cities and towns, asylums, and hospitals ; impurities of water, their origin and nature, whether occurring at its source, in storage, or in distribution, and methods of purification, by screens, filter-beds, infiltration galleries and chemical processes ; analysis, microscopical and chemical.

AIR—Composition, its impurities, effect of these on the sanitary condition of cities and towns, hospitals, asylums, public and private dwellings.

SOIL—methods of studying the topographical and geological features of a district in reference to the effect of the quality and characteristics of the soil upon the drainage and other sanitary conditions, the locations of cemeteries.

HOUSE DRAINAGE—water supply and drainage of public buildings and private dwellings, connected with the removal of laundry, sink, and closet refuse ; practical elements of plumbing.

SEWAGE—removal and disposal by various methods, including the frequent and systematic removal from cesspools and privies, accompanied by disinfection and deodorization, by the water-carriage system and pneumatic system, to points of its final disposition ; the construction of sewers, including combined and separate systems, outfalls, sea outfalls, tank sewers, ventilation of sewers, final disposition of sewage, garbage, and other refuse by cremation furnaces, irrigation, filtration, chemical precipitation ; the construction of plants and machinery for the same.

VENTILATION—quantity of air required under various conditions, methods of supplying or renewing air by natural or spontaneous means, by artificial means, including chimneys heated at the base by stoves, or steam coils, and removed by fans or blowers ; the determination of proper methods of introducing fresh air, its proper distribution, dimensions of the air conduits, and final rejection.

HEATING—the various means of heating by stoves, hot-air furnaces, hot water, and steam, and the most practical and efficient treatment of problems arising under various circumstances connected with public and private buildings ; the construction of the apparatus and the distribution of heat, whether in connection with or independent of the ventilation.

DRAINAGE—the drainage of rural districts for sanitary objects, the surface and subsoil drainage of cities and towns, drainage of sites for country dwellings, barns, and out-houses.

VILLAGE SANITATION—the construction, care, and management of cesspool and privies, and their disposition with regard to wells and dwellings ; care of streets, gardens, and yards, with reference to the accumulation and removal of refuse, surface and subsoil drainage.

POLLUTION OF STREAMS—remedies to be adopted, and means of prevention.

ARRANGEMENTS FOR PREVENTING AND AMELIORATING THE UNHEALTHY CONDITIONS ARISING IN CERTAIN TRADES AND MANUFACTORIES.

STREETS AND PAVEMENTS, as affecting the health of communities.

THE PRINCIPLES OF HEAT AND THERMO-DYNAMICS, applicable to all constructions connected with heating and ventilation, including boilers, radiators and flow of air through conductors.

INSPECTION—methods of examination of the sanitary conditions of public and private buildings, towns and villages, and of sewers, drains, and water-courses ; methods of disposal of sewage, and garbage ; official inspections by members of boards of health ; organizations of health commissions.

Candidates for the degree of sanitary engineer will be required to hand to the professor of civil engineering, at the end of the course, a thesis approved by the Faculty, on some subject connected with sanitary engineering, and will also be required to pass satisfactory examinations in the subjects taught.

Graduates of the School of Mines, and of other institutions are admitted to the post-graduate course in sanitary engineering without examination, provided they have completed the studies which qualify them to pursue the course with advantage.

Persons who are not graduates, may be admitted to the course in sanitary engineering, provided they pass the required examinations.

College diplomas and certificates will be accepted in lieu of examination for the subjects which they cover, *if satisfactory to the examining officers.*

Candidates for admission must pass satisfactory examinations in :

Mathematics :

Arithmetic, including the metric system of weights and measures ; Algebra, the equivalent of Peck's Manual of Algebra ; Geometry, Trigonometry, and Mensuration, the equivalent of Davies' Legendre ; Analytical Geometry, the equivalent of Wentworth's Analytical Geometry ; Differential and Integral Calculus, the equivalent of Osborne's.

Mechanics :

The equivalent of Peck's Analytical Mechanics.

Physics :

The equivalent of Atkinson's Ganot's Physics, which includes magnetism.

Chemistry :

The equivalent of the inorganic portion of Fownes' Manual of Chemistry. Also the chemistry of air ; water ; artificial illumination ; photography ; limes, mortars, and cements ; building stones: decay and preservation ; timber and its preservation ; pigments, paints, essential oils, varnishes ; glass and ceramics ; explosives : gun-powder, gun-cotton, and nitro-glycerine.

Biology :

Parker's Elementary Biology, or its equivalent.

Botany :

The equivalent of Bastin's College Botany.

Geology :

Lithological, cosmical, physiographic ; historical, including palæontology, (equivalent to Dana's Manual).

Surveying :

Use of level, transit, and plane-table, and methods of making topographical surveys.

Engineering :

General principles relating to materials and structures, physically and mechanically considered. Materials : stone, cements, brick, metals, timber, treated in regard to strength, durability, mode of preparation, defects, tests of quality, and fitness for special uses. Structures : earthwork, execution of earthwork, foundation and supports ; superstructure, joints ; strength and stiffness of parts ; special rules of construction for masonry of public buildings, retaining walls and arches.

Hygiene and Sanitary Science :

The causes of disease, methods of investigation and prevention ; vital statistics ; first aid to the injured ; blood, circulation ; muscles ; exercise ; nervous system ; bacteria ; contagious diseases ; digestion ; respiration ; ventilation ; water supply ; disposal of refuse ; drainage.

Microscopy and Microbiology :

Practical acquaintance with the handling of the microscope and microscopical mounting. Biological examination of a potable water, and of bacteria from one colony.

Graphics :

The equivalent of Church's Descriptive Geometry.

Drawing :

Consisting of free-hand sketching, lettering, instrumental and projection drawing, topographical drawing.

PART III

ELECTIVE COURSES OPEN TO SENIORS AND
SPECIALS IN THE SCHOOL OF ARTS

Members of the Senior class and specials in the School of Arts are admitted to all the studies of the first year in the School of Mines and to the following studies of the second year :—

Applied Chemistry (Chemistry XXIX)—3 hours. Professor CHANDLER
 Mediæval Architectural History (Architecture II)—2 hours. Professor WARE
 Theory of Form (Architecture IV)—1 hour, first term. Professor WARE
 The Decorative Arts (Architecture IV)—1 hour, second term. Professor WARE

UNIVERSITY COURSES FOR THE DEGREES OF
MASTER OF ARTS AND DOCTOR OF PHI-
LOSOPHY, AND SPECIAL COURSES *

I—Department of Architecture

By Professor WARE :

- 1 Architectural History and Design (Architecture XXI)—2 hours
 - 2 Scientific and Practical Construction (Architecture XXII)—2 hours
- Each course includes 20 hours a week in the drawing academy

II—Department of Chemistry

By Professor RICKETTS :

- 1 Special and Quick Methods of Assaying Ores, Metals, and Furnace Products (Chemistry XXII)—8 hours
- 2 Ore Testing for the Proper Selection of Methods of Treatment (Chemistry XXIII)—Conferences and laboratory practice 1 afternoon one half second term

By A. A. JULIEN, Ph.D. :

- 3 The Examination of Food and Drugs (Chemistry XXXIV)—2 hours
- 4 The Structure of Building Materials (Chemistry XXXV)—4 hours
- 5 Brewers' Yeast (Chemistry XXXIX)—4 hours

III—Department of Civil Engineering

By Professor BURR :

- 1 Sanitary Science. Water Supply, Sewerage, Drainage, Disposal of Sewage, Ventilation, Heating—2 hours
- 2 Rivers, Harbors, and Breakwaters. Physical characteristics of rivers, estuaries, and harbor bars ; methods of improvements ; location and construction of breakwaters and other marine works—2 hours
- 3 Railroad Transportation and Problems—2 hours

* Liberty to withdraw or alter courses is retained. Many other scientific university courses will be found in the circular of the Faculty of Pure Science.

IV—Department of Electrical Engineering

By Professor CROCKER :

- 1 History of the Development of the Applications of Electricity (Electrical Engineering XII)
- 2 Theory of Electrolysis and of Primary and Secondary Batteries (Electrical Engineering XIII)
- 3 Direct Conversion of the Energy of Fuel into Electricity (Electrical Engineering XIV)
- 4 Special Forms of Dynamo and Motor—High Frequency, High Potential, Unipolar, etc. (Electrical Engineering XV)
- 5 Long-Distance Transmission of Electric Power (Electrical Engineering XVI)
- 6 Theory of the Telephone (Electrical Engineering XVII)
- 7 Multiplex and Autographic Telegraphy (Electrical Engineering XVIII)
- 8 Special Applications of Electricity to Mining, Mechanical, Civil, and Metallurgical Engineering (Electrical Engineering XIX)

For post-graduate theoretical courses in Electricity, see Faculty of Pure Science, Mechanics VI, VII, VIII, IX, XIV, XV, XVII

V—Department of Mechanical Engineering

By Professor HUTTON :

- 1 Shop and Factory Organization and Management. Cash accounts, systems of manufacture, administration, etc. (Mechanical Engineering XX).
- 2 Hydraulic Engineering. Flow of water in pipes, transmission of power by fluids, pumps, and pumping engines (Mechanical Engineering XXI)
- 3 Marine Engineering (Mechanical Engineering XXII)
- 4 Thermodynamics and Heat Engines. Advanced course upon the problems of design of heat engines, using steam or other fluids (Mechanical Engineering XXIII)

This is based upon courses IV and V in Mechanics and courses VII and VIII in Mechanical Engineering, which are prerequisites for it

- 5 Dynamics of Engineering and Machine Design. Advanced course upon the problems of transmission of power, kinematics, and use of mechanism (Mechanical Engineering XXIV)

This is based upon courses XII and XIII

- 6 Motors other than Steam. Advanced course in utilization of the forces of nature for motive power. Water, wind, and wave motors (Mechanical Engineering XXV)

This is based upon course XI

- 7 The Materials of Engineering. Advanced course of investigation upon the resistances of materials to strain, and upon their applicability to engineering uses (Mechanical Engineering XXVI)

This is based upon courses V, VI, XVII, and XVIII, which are a prerequisite for it

- 8 The Locomotive Engine. Advanced study in design and adaptation of motive power to special problems (Mechanical Engineering XXVII)

- 9 Efficiencies of Motors and Machines. Special laboratory investigations of common and unusual designs and new combinations (Mechanical Engineering XXVIII)
- 10 Special Problems and Original Investigations in Mechanical Engineering. With conference, laboratory work, and assigned reading as required (Mechanical Engineering XXIX)

These advanced courses are mainly carried on by individual instruction as the needs of each student may require, and the nature of the subject. Reading, laboratory work, and conferences are the usual methods of instruction.

VI—Department of Mining

By Professor MUNROE :

- 1 Coal Mining (Mining XII)—2 hours
- 2 Ore Mining (Mining XIII)—2 hours
- 3 Coal Washing (Mining XIV)—1 hour
- 4 Ore Dressing (Mining XV)—1 hour
- 5 Examination of a Mineral Property or a Mine (Mining XVI)—four to six weeks in vacation
- 6 Examination of a Coal Washing Plant, or an Ore Dressing Plant (Mining XVII)—four to six weeks in vacation
- 7 Special Problems and Original Investigations in Ore Dressing and Mining (Mining XVIII)

NOTE : In proper cases special students are permitted to take the foregoing subjects, if held to be qualified therefor.

APPARATUS SUPPLIES

- 1 Students may purchase apparatus of any of the dealers in the city.
- 2 To avoid inconvenience and expense to the students, and to secure a proper selection, the school undertakes, at considerable trouble and expense, to lend apparatus on the following conditions :
 - (a) Each student engaged in laboratory work must make a deposit of forty dollars (\$40) with the registrar, which deposit will be credited to him on the ledger. In case of excessive draughts of apparatus an additional deposit may be required.
 - (b) Each student shall be entitled, on presenting his receipt at the apparatus room, to draw the regular set of apparatus for qualitative, quantitative, or organic analysis, for assaying, for microscopy, or for bacteriology, according to his deposit, and from time to time to obtain ordinary articles which he may need, and these will be charged to him. At the end of the year he will be credited with those articles which he returns in good order, and the value of those which he has injured or broken will be deducted from his deposit.
 - (c) The apparatus room will be open for issuing apparatus every day at convenient hours.
 - (d) No charge is made for ordinary chemicals.

REGISTER OF STUDENTS

ABBREVIATIONS

(A).....	Course in Architecture
(C).....	Course in Analytical and Applied Chemistry
(C E).....	Course in Civil Engineering
(E E).....	Course in Electrical Engineering
(G).....	Course in Geology and Palæontology
(M).....	Course in Metallurgy
(M E).....	Course in Mining Engineering

I—UNDERGRADUATE COURSES

FOURTH CLASS

NAME	RESIDENCE	CITY ADDRESS
Joseph Bartlett Acken (A)	<i>Haworth, N. J.</i>	2 West 14th st.
Leon Hyneman Barnett (M E)	<i>New York City</i>	60 West 75th st.
Adolph Black (C E)	<i>New York City</i>	1434 Lexington ave.
Marston Taylor Bogert, A.B. (C)	<i>Flushing, N. Y.</i>	97 Nassau st.
Francis Albertson Cokefair (C E)	<i>Plainfield, N. J.</i>	38 West 34th st.
Fred Hall Dewey (A)	<i>Mexico, N. Y.</i>	175 East 71st st.
Henry George Emery (A)	<i>Nyack, N. Y.</i>	
William Kinne Fellows (A)	<i>Tawas City, Mich.</i>	109 West 47th st.
Edward Pell Folger (C E)	<i>Brooklyn, N. Y.</i>	(80 Quincy st.)
Paul Fuentes (M E)	<i>Hoboken, N. J.</i>	(321 Hudson st.)
David Joy Greene (C E)	<i>Brooklyn, N. Y.</i>	(131 Milton st.)
Edward Francis Haas, B.S. (C E)	<i>Stockton, Cal.</i>	65 West 49th st.
Frank Chandler Hamilton, A.M. (M E)	<i>Brooklyn, N. Y.</i>	(101 Lafayette ave.)
Richard Cochran Hanson (C E)	<i>Newark, N. J.</i>	(136 Lincoln ave.)
Harry Allan Jacobs (A)	<i>New York City</i>	107 East 78th st.
Meyer Joffe (C E)	<i>Verona, N. J.</i>	204 East Broadway
Edward Marwedel Jones (C E)	<i>New York City</i>	312 West 28th st.
Julius Charles Kastner (A)	<i>New York City</i>	72 East 92d st.
Thomas Lonsdale Leeming, Jr. (C)	<i>Brooklyn, N. Y.</i>	(216 Park pl.)
Edward William Libaire (C E)	<i>New York City</i>	150 West 49th st.
Charles Ransom McNeil (A)	<i>Litchfield, Conn.</i>	175 East 71st st.
Harris Kennedy Masters (M E)	<i>Brooklyn, N. Y.</i>	(173 Congress st.)

NAME	RESIDENCE	CITY ADDRESS
Edwin Henry Messiter (C E)	<i>Elizabeth, N. Y.</i>	130 Madison ave.)
Benjamin Wistar Morris, Jr. (A)	<i>Portland, Ore.</i>	273 Madison ave.
Kenneth Mackenzie Murchison, Jr. (A)	<i>New York City</i>	46 West 57th st.
Harold Ashton Parsons (C E)	<i>South Norwalk, Conn.</i>	
John Russell Pope (A)	<i>New York City</i>	111 East 25th st.
John Lloyd Prince (E E)	<i>Flatbush, L. I.</i>	
Charles Tomlinson Rittenhouse, Mech. Eng. (E E)	<i>New York City</i>	247 West 138th st.
Charles Depew Searle (C E)	<i>New York City</i>	32 West 126th st.
Rudolph Seldner (C)	<i>Brooklyn, N. Y.</i>	(217 Jefferson ave.)
Edward Danforth Self, Mech. Eng. (M E)	<i>South Orange, N. Y.</i>	
Gerald Fitzgerald Sherman (C E)	<i>Boise City, Idaho</i>	147 East 45th st.
Wilson Fitch Smith (C E)	<i>New York City</i>	36 West 36th st.
Joseph Lauferty Steinam (A)	<i>New York City</i>	31 West 95th st.
William Noyes Taintor (A)	<i>New York City</i>	230 West 59th st.
George Francis Tennille (C)	<i>New York City</i>	116 West 48th st.
John Almy Tompkins, 2d (A)	<i>New York City</i>	223 East 17th st.
Lewis Herbert Vail (E E)	<i>Locust Valley, L.I.</i>	
William Dunham Vanderbilt (C E)	<i>Garden City, L.I.</i>	
Jules Joseph Vatable (A)	<i>New York City</i>	Clarendon Hotel
Henry Vincent Walker (C)	<i>Brooklyn, N. Y.</i>	(40 Broome st.)
Franklin Backus Ware (A)	<i>New York City</i>	1285 Madison ave.
William Young Westervelt (M)	<i>Hackensack, N. Y.</i>	(70 Passaic st.)
Theodore Greely White (G)	<i>New York City</i>	39 West 26th st.
Fourth Class.....45		

THIRD CLASS

NAME	RESIDENCE	CITY ADDRESS
Abram Horace Albertson (A)	<i>Bangor, Penn.</i>	119 Crescent ave., Plainfield, N. J.
Joseph Albert Alexander (C E)	<i>New York City</i>	67 West 95th st.
Augustus Nichols Allen, A.B. (A)	<i>Ludingtonville, N. Y.</i>	109 West 47th st.
William Claflin Andrews (E E)	<i>Brooklyn, N. Y.</i>	(80 Columbia Heights)
George Frost Archer (E E)	<i>Garden City, L.I.</i>	31 Burling Slip
David Henry Baldwin (C E)	<i>New York City</i>	144 West 122d st.
Philip Ashton Barber (C E)	<i>Elizabeth, N. Y.</i>	27 State st.
Frederick Phinney Bayles (M E)	<i>Orange, N. Y.</i>	(408 Main st.)
Victor Mayor Benedikt, B.S. (E E)	<i>New York City</i>	123 East 83d st.
Joseph Bijur, A.B. (E E)	<i>New York City</i>	41 West 53d st.
Joshua Binion, B.S. (C E)	<i>New York City</i>	5 Canal st.
Samuel Joseph Bloomingdale (A)	<i>New York City</i>	21 East 63d st.
Henry Dick Bultman (A)	<i>Brooklyn, N. Y.</i>	(144 Hewes st.)
Percy Morris Burrill (M E)	<i>Bartow-on-Sound, N. Y.</i>	56 East 49th st.
Edward Coykendall (C E)	<i>Kingston, N. Y.</i>	233 West 45th st.
Max Dobbins (M E)	<i>Rahway, N. Y.</i>	143 Liberty st.
Charles Dräsel (M E)	<i>Jersey City, N. Y.</i>	(230 Webster ave.)

NAME	RESIDENCE	CITY ADDRESS
Henry Welles Durham (C E)	<i>New York City</i>	101 West 78th st.
Ira Nash Evans (C E)	<i>Brooklyn, N. Y.</i>	(755 Quincy st.)
Ernest August von Fintel, Jr., B.S. (C E)	<i>New York City</i>	105 East 90th st.
David Foerster (M)	<i>Cincinnati, O.</i>	593 Lexington ave.
Mortimer Joseph Fox (A)	<i>New York City</i>	127 East 79th st.
Charles Gartensteig, B.S. (C E)	<i>New York City</i>	215 East 71st st.
Benjamin Britton Gottsberger (M E)	<i>Irvington, N. Y.</i>	
Frank Joseph Morgan Grace (C E)	<i>New York City</i>	52 East 79th st.
Howard Stevens Hadden (A)	<i>Brooklyn, N. Y.</i>	(69 Remsen st.)
Charles Simon Herzig (M E)	<i>Dobbs Ferry, N. Y.</i>	
Clarence Frost Horton (C E)	<i>Peekskill, N. Y.</i>	(1022 Orchard st.)
Louis Doremus Huntoon, Ph.G. (M E)	<i>Paterson, N. J.</i>	(95 Bridge st.)
Elisha Harris Janes (A)	<i>New York City</i>	57 West 95th st.
Zadok Harry Jarman (M E)	<i>Brooklyn, N. Y.</i>	(112 Lefferts pl.)
Frederick Hedley Jobbins (C)	<i>New York City</i>	1674 Broadway
William Bard Johnstone (C E)	<i>New Brighton, S.I.</i>	(47 Central ave.)
Gustavus Town Kirby (E E)	<i>New York City</i>	158 West 45th st.
William Davidson Kirker (E E)	<i>Paterson, N. J.</i>	(214 Tyler st.)
James Mason Knox (E E)	<i>New York City</i>	32 West 129th st.
Henry Kraemer, Ph. G. (C)	<i>New York City</i>	18 West 60th st.
Richard Leopold Leo (A)	<i>New York City</i>	151 West 76th st.
George Herbert Lesley (C E)	<i>Spuyten Duyvil, N. Y.</i>	
Frank Ludlam (A)	<i>New York City</i>	8 West 16th st.
Charles Harris Lum (A)	<i>Chatham, N. J.</i>	
William Bradford McKinlay (M E)	<i>New York City</i>	108 West 79th st.
Charles Alexander Macy, 2d (M E)	<i>New York City</i>	208 West 45th st.
Alfred Fillebrown Main (M E)	<i>Brooklyn, N. Y.</i>	(299 Jefferson ave.)
Samuel Osgood Miller (C E)	<i>West Nyack, N. Y.</i>	
Edgar Joachim Moeller (A)	<i>New York City</i>	3 Riverview terrace
Leon Moisseieff (C E)	<i>New York City</i>	121 Forsyth st.
Percival Robert Moses (E E)	<i>New York City</i>	32 West 61st st.
Isaac Natkins, B.S. (E E)	<i>New York City</i>	418 West 40th st.
Alexander Farnum Ormsbee (E E)	<i>Brooklyn, N. Y.</i>	(183 Joralemon st.)
Francis Livingston Pell (A)	<i>New York City</i>	13 East 29th st.
Howell Corbey Perrin (A)	<i>Larchmont, N. Y.</i>	696 Madison ave.
George Perrine (C E)	<i>New York City</i>	716 West End ave.
Charles Paul Peugnet (C E)	<i>New York City</i>	231 West 45th st.
Herbert Pinkham (C E)	<i>New York City</i>	176 West 81st st.
Juan Miguel Portuondo (C E)	<i>New York City</i>	340 East 116th st.
Charles Lawrence Riker (C)	<i>New York City</i>	19 West 57th st.
Luis Salazar (E E)	<i>Hoboken, N. J.</i>	P. O. Box 3427
John Seward (M E)	<i>Orange, N. J.</i>	
Lucien Rowland Shattuck, B.S. (C E)	<i>Brooklyn, N. Y.</i>	(238 President st.)
Charles Douglas Shradly (C E)	<i>New York City</i>	8 East 66th st.
Herbert James Smith (E E)	<i>New York City</i>	152 West 77th st.
Morrel Boughton Spaulding (M E)	<i>New York City</i>	207 West 57th st.

NAME	RESIDENCE	CITY ADDRESS
John Henry Stewart (C E)	<i>New York City</i>	123 West 11th st.
Frank Sutton (E E)	<i>New York City</i>	54 West 71st st.
William Stevens Thyng (M E)	<i>Roselle, N. J.</i>	
Samuel Auchmuty Tucker (C)	<i>New York City</i>	80 Washington sq.
Frederick Warwick Walker (C E)	<i>Jersey City, N. J.</i>	(339 Webster ave.)
Lowe Whiting (M E)	<i>St. Paul, Minn.</i>	3 East 47th st.
Simon Roberto Yrizar, A. B. (M E)	<i>Sauceda, State of Zacatecas, Mex.</i>	51 Broad st.
Third Class 70		

SECOND CLASS

NAME	RESIDENCE	CITY ADDRESS
Frederick Auryansen (C E)	<i>Piermont, N. Y.</i>	
Solomon D. Benoliel, B.S. (E E)	<i>New York City</i>	116 West 35th st.
Harrison Kerr Bird (E E)	<i>New York City</i>	33 East 72d st.
Reed Raymond Bishop (E E)	<i>New York City</i>	345 West 48th st.
George Sylvester Brackett (M E)	<i>Cumberland, Md.</i>	
	(611 Hudson st., Hoboken, N. J.)	
Duncan Willson Candler (A)	<i>Brooklyn, N. Y.</i>	(11 Monroe pl.)
Edward Joseph Carney (C E)	<i>New York City</i>	67 West 68th st.
Benjamin Palmer Carter (M E)	<i>New Orleans, La.</i>	593 Lexington ave.
Gale Hogeboom Carter (M E)	<i>New York City</i>	130 East 24th st.
Allan Jay Clark (M E)	<i>New York City</i>	873 Madison ave.
James Robert Coe (E E)	<i>Brooklyn, N. Y.</i>	(317 Quincy st.)
James Musgrave Aertsen Darrach (A)	<i>Newark, N. J.</i>	(26 Stratford pl.)
John Bowie Dash (M E)	<i>New York City</i>	Van Cortlandt Park
George Wesley Fletcher (E E)	<i>Brooklyn, N. Y.</i>	(38 Grove st.)
Benjamin Lincoln Foote (M E)	<i>Tarrytown, N. Y.</i>	
Lindley Murray Franklin, Jr. (A)	<i>Flushing, L. I.</i>	
Goldwin Charlton Goldsmith (A)	<i>New Rochelle, N. Y.</i>	(50 Sound View ave.)
Louis Gottschall (A)	<i>New York City</i>	207 East 53d st.
Herbert Durand Hawks (E E)	<i>New York City</i>	409 West 56th st.
Charles Valentine Hesselbach, A. B. (C E)	<i>New York City</i>	93 Lexington ave.
George Gustav Heye (E E)	<i>New York City</i>	11 East 48th st.
Edwin Chapin Holden, B.S. (M E)	<i>New York City</i>	17 West 132d st.
Charles Edward Hyatt (E E)	<i>Newark, N. J.</i>	(793 High st.)
Henry St. John Hyde (C)	<i>New York City</i>	210 East 18th st.
Jacob Jacobs (C E)	<i>New York City</i>	128 Allen st.
David Chambers Lewis, A. B. (A)	<i>Portland, Oregon</i>	15 West 43d st.
Joseph Lowenstein (C)	<i>Newark, N. J.</i>	(205 Belmont ave.)
Richard Stanislaus McCaffery (M E)	<i>New York City</i>	316 East 124th st.
Wilkes McClave (E E)	<i>Greenwich, Conn.</i>	136 West 58th st.
William Lytle McConway (M E)	<i>Pittsburgh, Pa.</i>	151 West 70th st.
Paul McGahan (E E)	<i>Hains Falls, N. Y.</i>	787 Park ave.
Donald MacGregor (A)	<i>New York City</i>	1118 Madison ave.
Arthur Metzger (C)	<i>New York City</i>	43 East 72d st.
Ambrose Monell, Jr. (E E)	<i>New York City</i>	43 Lafayette pl.

NAME	RESIDENCE	CITY ADDRESS
Richard Augustin Monks (C E)	<i>New York City</i>	139 West 121st st.
Hardman Philips Alan Montgomery (A)	<i>New York City</i>	1189 Madison ave.
George Tremaine Morse (A)	<i>Brooklyn, N. Y.</i>	(613 Carlton ave.)
Harry Burritt Mulliken (A)	<i>Detroit, Mich.</i>	109 West 47th st.
Edward Necarsulmer (A)	<i>New York City</i>	109 East 70th st.
William Henry Nichols, Jr. (M E)	<i>Brooklyn, N. Y.</i>	(353 Clinton ave.)
Charles Of (M E)	<i>New York City</i>	892 Prospect ave.
Robert Kitching Painter (M E)	<i>New Brunswick, N. J.</i>	602 Lexington ave.
George Quintard Palmer (C E)	<i>New York City</i>	922 Fifth ave.
Alan Patterson (C E)	<i>New Canaan, Conn.</i>	27 West 26th st.
Joel Pemoff (C E)	<i>New York City</i>	217 East Broadway
Charles Langdon Perry (E E)	<i>Short Hills, N. J.</i>	
Lewis Frederick Pilcher (A)	<i>Brooklyn, N. Y.</i>	(145 Gates ave.)
Herman Alfred Prosser (M E)	<i>Brooklyn, N. Y.</i>	(406 Stuyvesant ave.)
Arthur Fitz Randolph (C E)	<i>New York City</i>	1730 Broadway
Frederick Condit Reeve (E E)	<i>Newark, N. J.</i>	(217 Mt. Pleasant ave.)
Arthur Emil Riedel (M E)	<i>New York City</i>	146 Delancey st.
Charles Rodenburg (C E)	<i>New York City</i>	428 West 44th st.
Edward Lazarus Rosenfeld (C E)	<i>New York City</i>	128 West 93d st.
David Serber (C E)	<i>New York City</i>	98 Suffolk st.
Elliot Mathews Sergeant (E E)	<i>Summit, N. J.</i>	
Edward Isaac Shire (A)	<i>New York City</i>	109 East 61st st.
Walter Irvine Slichter (E E)	<i>New York City</i>	127 West 58th st.
Henry Stern (A)	<i>New York City</i>	1437 Lexington ave.
Edward Barney Sturgis (M E)	<i>New York City</i>	307 East 17th st.
Lyman Barney Sturgis (E E)	<i>New York City</i>	307 East 17th st.
William Gabriel Tachau (A)	<i>Louisville, Ky.</i>	109 West 85th st.
Max Bernard Toch (A)	<i>New York City</i>	295 East 10th st.
Edward De Voe Tompkins (C E)	<i>New York City</i>	632 West End ave.
Samuel George Fitzhugh Townsend, A.B. (E E)	<i>New York City</i>	131 Fifth ave.
Josiah Thomas Tubby, Jr. (A)	<i>Brooklyn, N. Y.</i>	(67 Willow st.)
William Cullen Uhlig (C)	<i>New York City</i>	229 East 12th st.
Boyd Van Benthuyzen (A)	<i>Albany, N. Y.</i>	28 East 47th st.
Arthur Pine Van Gelder (C)	<i>Catskill, N. Y.</i>	116 East 54th st.
Harry Hooker Wilson (C E)	<i>Montclair, N. J.</i>	15 East 81st st.
Charles Shepard Witherell (M)	<i>Belle Haven, Conn.</i>	42 East 25th st.
George Albert Wright (C E)	<i>Peekskill, N. Y.</i>	(510 North Division st.)
Second Class.....71		

FIRST CLASS

NAME	RESIDENCE	CITY ADDRESS
Garret G. Ackerson (C)	<i>Hackensack, N. J.</i>	
James Dhu Andrew, Jr. (E E)	<i>Brooklyn, N. Y.</i>	20 Exchange pl.
Wilbur David Andrews (A)	<i>New York City</i>	176th st., Fort Washington
George Christian Anthon (E E)	<i>New York City</i>	13 West 35th st.

NAME	RESIDENCE	CITY ADDRESS
George Ernal Arents (C)	<i>New York City</i>	38 West 51st st.
Henry Howell Armstead, Jr. (ME)	<i>Brooklyn, N. Y.</i>	56 West 47th st.
Franklin Lawrence Babcock (E E)	<i>Riverdale-on-Hudson, N. Y.</i>	
Walter Clymer Barnes (E E)	<i>Paterson, N. J.</i>	(339 Broadway)
Putnam Asbury Bates (E E)	<i>New York City</i>	113 West 72d st.
Ahrend Bavendam, Jr. (E E)	<i>Brooklyn, N. Y.</i>	(340 Greene ave.)
David Elder Baxter (C E)	<i>New York City</i>	32 West 60th st.
Wylls Pomeroy Baxter (E E)	<i>Babylon, L. I.</i>	109 East 17th st.
John Jacob Bellman (E E)	<i>New York City</i>	90 King st.
Ralph Westervelt Best (M E)	<i>New York City</i>	15 West 121st st.
George Edgar Bissell, Jr. (E E)	<i>Morris Park, L. I.</i>	
George Abraham Boehm (A)	<i>New York City</i>	139 East 72d st.
Emil Christian Boerner, Jr. (E E)	<i>Portchester, N. Y.</i>	
William Arthur Bostwick (M)	<i>New York City</i>	324 West 46th st.
Juan Felix Brandes (E E)	<i>Casilla 607, Buenos Aires</i>	(Demarest, N. J.)
Alexander Morrison Brown (M E)	<i>New York City</i>	245 West 54th st.
Harris Sutton Burroughs (E E)	<i>Brooklyn, N. Y.</i>	(1282 Dean st.)
Edward Moen Cary (E E)	<i>New York City</i>	14 West 77th st.
Henri George Francis James Chatain (E E)	<i>New York City</i>	47 West 71st st.
Charles Martin Clark (E E)	<i>New York City</i>	831 Madison ave.
Josiah Huntoon Clark (M E)	<i>Paterson, N. J.</i>	(238 Broadway)
Frederick Hanover Cone (M E)	<i>New York City</i>	57 East 73d st.
Herbert Wheaton Congdon (A)	<i>West New Brighton, N. Y.</i>	18 Broadway
Stewart Hooker Crampton (E E)	<i>Brooklyn, N. Y.</i>	(95 Gates ave.)
Guy Whitmore Culgin (C E)	<i>New York City</i>	118 East 61st st.
George De Clyver Curtis, A.B. (A)	<i>New York City</i>	27 Washington pl.
Summerfield Samuel Curtiss (A)	<i>Brooklyn, N. Y.</i>	(1097 Putnam ave.)
William Stewart Davidson (M E)	<i>Sherbrooke, Quebec, Canada</i>	313 West 48th st.
Lynley Seymour Davis (A)	<i>New York City</i>	11 East 62d st.
Theakston de Coppet (A)	<i>New York City</i>	22 West 17th st.
Frank Dobbins (M E)	<i>Rahway, N. J.</i>	
Douglas Zabriski Doty (M E)	<i>New York City</i>	23 West 20th st.
Louis Eickwort, Jr. (C E)	<i>New York City</i>	712 Tremont ave.
Alexander Simpson Farmer (C E)	<i>Brooklyn, N. Y.</i>	(139 South 4th st.)
Joseph Lea Fearing (E E)	<i>New York City</i>	7 East 43d st.
Robert Anton Fliess (E E)	<i>New York City</i>	201 West 55th st.
Dexter Newell Force, Jr. (E E)	<i>Montclair, N. J.</i>	
Jerome Henry Fort (C)	<i>Brooklyn, N. Y.</i>	(473 Evergreen ave.)
John Henry Fulle (E E)	<i>New York City</i>	1626 Madison ave.
Charles Herman Fulton (M E)	<i>Brooklyn, N. Y.</i>	(670 President st.)
Thomas Walker Gaggin (A)	<i>Erie, Pa.</i>	(36 Kearney st., Newark, N. J.)
Abner Winthrop Gill, A.B. (C E)	<i>Northampton, Mass.</i>	2164 Fifth ave.
Richard David Godley, Jr. (E E)	<i>Whitestone Landing, L. I.</i>	
Frederick Arthur Goetze, Jr. (E E)	<i>Jersey City, N. J.</i>	(351 Webster ave.)
George Selden Goodrich (M E)	<i>Brooklyn, N. Y.</i>	(170 South Oxford st.)
John Wesley Goodridge (C E)	<i>Brooklyn, N. Y.</i>	(981 Greene ave.)

NAME	RESIDENCE	CITY ADDRESS
August Henry Gotthelf (C)	<i>Hastings-on-Hudson, N. Y.</i>	
Robert Dun Graham (A)	<i>New York City</i>	13 West 17th st.
Walter Suffern Gurnee, 3d (E E)	<i>New York City</i>	83 East 55th st.
Clarence Asahel Hammond (C)	<i>Brooklyn, N. Y.</i>	(870 President st.)
Albert Hansen (C)	<i>New York City</i>	409 West 57th st.
Leo Hauser (A)	<i>New York City</i>	119 East 54th st.
William Walter Hawkins (E E)	<i>Rockville Centre, L. I.</i>	
Simon Morris Herman (C)	<i>New York City</i>	74 West 90th st.
Henry Herz (A)	<i>Jersey City, N. J.</i>	(142 Mercer st.)
Leo Walter Hildburgh (E E)	<i>New York City</i>	42 East 68th st.
Frederick Montgomery Holbrook (E E)	<i>Brooklyn, N. Y.</i>	(662 Jefferson ave.)
Lemuel Valentine Holder (E E)	<i>New York City</i>	161 West 76 st.
Richard Willis How, Jr. (C E)	<i>Wantagh, L. I.</i>	
Frederick Trowbridge Howard (A)	<i>Brooklyn, N. Y.</i>	(226 Lincoln pl.)
Raymond Howard (E E)	<i>New York City</i>	46 West 52d st.
Charles Armstrong Hutchinson (C E)	<i>New York City</i>	47 West 49th st.
Mandeville Cornelius Jacobus (C E)	<i>Englewood, N. J.</i>	
Frederick Atkins Johnston (C E)	<i>Stapleton P. O., Staten Island, N. Y.</i>	
James Ellwood Jones (M E)	<i>Freemans, Mercer Co., W. Va.</i>	650 Madison ave.
Morris Joseph (E E)	<i>New York City</i>	212 East 58th st.
Edward Jova (C E)	<i>New York City</i>	225 West 45th st.
Hanford Chase Judson (E E)	<i>Dobbs Ferry, N. Y.</i>	
Edwin Kaufmann (A)	<i>New York City</i>	49 East 66th st.
George Antony Keiley, B.S. (A)	<i>New York City</i>	220 West 78th st.
William George Kilian (A)	<i>New York City</i>	352 West 33d st.
J. Day Knap (C E)	<i>New York City</i>	256 West 73d st.
Richard Koch (E E)	<i>New York City</i>	1234 Madison ave.
John Elias Kumpf (A)	<i>New York City</i>	308 East 35th st.
Russell Lane (C)	<i>Orange, N. J.</i>	(26 Clarendon pl.)
Max Loewenthal (E E)	<i>New York City</i>	100 East 87th st.
Frederick Van Duzer Longacre (E E)	<i>Yonkers, N. Y.</i>	(178 Warburton ave.)
Howard Carlisle Loudon (E E)	<i>Brooklyn, N. Y.</i>	(161 Keap st.)
John Campbell Mabey, Jr. (M E)	<i>New York City</i>	27 West 17th st.
Henry Bennett Machen (C E)	<i>New York City</i>	150 West 82d st.
Charles William MacMullen (E E)	<i>New York City</i>	521 West 161st st.
John Henry Madden (C E)	<i>New York City</i>	308 West 30th st.
Hugh Sisson Magruder (A)	<i>Baltimore, Md.,</i>	244 East 50th st.
Oscar Raymond Maicas (C E)	<i>New York City</i>	721 Broadway
Leo Raphael Manheims (E E)	<i>New York City</i>	319 East 87th st.
Lucius Trowbridge Martin (E E)	<i>New York City</i>	114 East 36th st.
Fred Lewis Miller Masury (C)	<i>New York City</i>	145 West 58th st.
Sanford Mead (A)	<i>Greenwich, Conn.</i>	
Henry Bedinger Mitchell (E E)	<i>Flushing, L. I.</i>	74 Leonard st.
Hobart Tomlinson Montague (E E)	<i>New York City</i>	14 West 34th st.
Monson Morris (E E)	<i>New York City</i>	14 East 63d st.
Herbert Hunt Morrison (C E)	<i>New York City</i>	118 West 87th st.

NAME	RESIDENCE	CITY ADDRESS
Engelbert Neus, B.S. (A)	<i>New York City</i>	454 East 116th st.
William Aloysius O'Connor (A)	<i>New York City</i>	12 East 44th st.
Frank Fletcher Palmer (C E)	<i>New York City</i>	922 Fifth ave.
Thomas Bloodgood Peck, Jr. (E E)	<i>New York City</i>	111 East 34th st.
Rudolph Henry Peppmuller (A)	<i>New York City</i>	218 East 69th st.
Seymour Perkins (C E)	<i>New York City</i>	42 West 46th st.
Albert George Pfeiffer (C)	<i>New York City</i>	1057 Lexington ave.
James Otis Post (A)	<i>Bernardsville, N. J.</i>	11 West 21st st.
Jonathan Sylvester Provost (E E)	<i>Caldwell, N. J.</i>	
Arnold William Pupke (E E)	<i>New York City</i>	150 West 57th st.
Herman Philip Ralph (C E)	<i>Smithtown, L. I.</i>	
Joseph Rapaport (E E)	<i>Brooklyn, N. Y.</i>	(109 Decatur st.)
George Washington Rappold (A)	<i>Brooklyn, N. Y.</i>	(750 Flushing ave.)
William Oakley Raymond (A)	<i>New York City</i>	31 West 82d st.
George Washington Regan (E E)	<i>Brooklyn, N. Y.</i>	(302 Degraw st.)
Emil Justus Riederer (C)	<i>New York City</i>	145 West 94th st.
Charles Edward Rogers (C E)	<i>New York City</i>	6 West 125th st.
William Ropes (C E)	<i>Brooklyn, N. Y.</i>	(125 Willow st.)
Juan Pablo Ros, A.B. (M E)	<i>New York City</i>	443 West 22d st.
Victor Alfonso Ros, A.B. (E E)	<i>Cienfuegos, Cuba</i>	39 West 26th st.
Auguste Jacques Rossi, Jr. (M E)	<i>Perth Amboy, N. J.</i>	
William Newton Ryerson (E E)	<i>Montclair, N. J.</i>	
John Huntting Sayres (C E)	<i>Great Barrington, Mass.</i>	
	(456 Classon ave., Brooklyn, N.Y.)	
Davison Heermance Smith (E E)	<i>New York City</i>	20 East 42d st.
Oscar Bloodgood Smith, Jr. (A)	<i>Morristown, N. J.</i>	(61 Franklin st.)
Jacob Barstow Smull (E E)	<i>New York City</i>	37 West 76th st.
Isaac Stander (C E)	<i>New York City</i>	64 Avenue D.
Clinton Stephens, Jr. (E E)	<i>Brooklyn, N. Y.</i>	(660 Lafayette ave.)
Benjamin Emanuel Stern (A)	<i>New York City</i>	266 Lenox ave.
John Edward Stow Sutton (E E)	<i>Brooklyn, N. Y.</i>	(118 Montague st.)
Rowland Gilbert Tibbals (C E)	<i>Brooklyn, N. Y.</i>	(148 Milton st.)
Lorenzo Eastman Tripler (M E)	<i>New York City</i>	40 West 77th st.
Fitz-Henry Faye Tucker (A)	<i>New York City</i>	162 West 123d st.
Joseph Van Vleck, Jr. (A)	<i>Montclair, N. J.</i>	24 East 47th st.
Charles Adolph Waldenberger (C)	<i>New York City</i>	155 East 37th st.
Raymond Duy Weeks (A)	<i>New York City</i>	227 West 135th st.
Dana Clemmer Wells, A.B. (E E)	<i>Brooklyn, N. Y.</i>	(109 Willow st.)
Lazarus White (C E)	<i>New York City</i>	14 East 120th st.
William Henry Wicke, Jr. (M E)	<i>Lawrence, L. I.</i>	34 East 68th st.
Harry Oakley Williams (E E)	<i>Hackensack, N. J.</i>	
Ralph Garigue Wright (C)	<i>St. Louis, Mo.</i>	426 Central Park, West
Albert Mortimer Young (E E)	<i>Bay Shore, L. I.</i>	611 Fifth ave.

First Class.....138

POST-GRADUATE COURSE

ELECTRICAL ENGINEERING

SECOND CLASS

NAME	RESIDENCE	CITY ADDRESS
Aron Wright Chapman, A.B.	<i>Brooklyn, N. Y.</i>	(160 Hicks st.)
Le Roy Clark, Jr.	<i>New York City</i>	350 West 30th st.
Harry Dubois Frisbee	<i>New York City</i>	1340 Fulton ave.
George Kemp Mears	<i>Elizabeth, N. J.</i>	
Mariano Luis Mora, C.E.	<i>New York City</i>	63 West 70th st.
Max Osterberg	<i>New York City</i>	232 East 62d st.
John Clifford Rennard, A.B.	<i>New York City</i>	302 West 73d st.
Alexander Stratton, B.S.	<i>New York City</i>	2013 Fifth ave.
Second Class.....		8

FIRST CLASS

NAME	RESIDENCE	CITY ADDRESS
Oscar Carlos Bacot	<i>New York City</i>	"The Rutland," 57th st. and Broadway
Henry Williams Dwight, 4th	<i>Stockbridge, Mass.</i>	80 Washington sq.
First Class.....		2

COURSES FOR THE A.M. DEGREE

Following each student's name are printed, in *italics*, the subjects pursued by him under the Faculty of Mines ; if the student is enrolled under another Faculty as well, the name of that Faculty is given in Roman type. The major subject, or the Faculty under which the major subject is taken, is in every case printed first.

NAME	RESIDENCE	CITY ADDRESS
Joshua Binion	<i>New York City</i>	5 Canal st.
College of the City of New York, B.S. <i>Electrical Engineering</i> , Philosophy		
Charles Wyman Buckham	<i>New York City</i>	63 West 55th st.
University of Vermont, A.B. <i>Architecture</i> , <i>History of Modern Architecture</i> , <i>History of Modern Ornament</i> , Philosophy		
Olof Zacharias Cervin	<i>Rock Island, Ill.</i>	262 West 115th st.
Augustana College, B.S. <i>Architecture</i> , <i>History of Ornament</i> , Philosophy		
Ernest August von Fintel, Jr.	<i>New York City</i>	105 East 90th st.
College of the City of New York, B.S. <i>Electrical Engineering</i> , Philosophy, Political Science		

NAME	RESIDENCE	CITY ADDRESS
Charles Gartensteig	<i>New York City</i>	215 East 71st st.
College of the City of New York, B.S. <i>Electrical Engineering</i> , Philosophy		
Philip Green Gossler	<i>Brooklyn, N. Y.</i>	(Vanderbilt Building)
Pennsylvania State College, B.S. <i>Electrical Engineering</i> , Pure Science, Political Science		
Charles Howard Parmley	<i>New York City</i>	34 West 29th st.
College of the City of New York, M.S., Columbia College, E.E. Pure Science, <i>Electrical Engineering</i>		
Thomas Norwood Penrose	<i>New York City</i>	147 West 61st st.
Yale University, A.B., Columbia College Law School, LL.B. <i>Electrical Engineering</i> , <i>Mechanical Engineering</i> , Pure Science		
For Degree of Master of Arts.8		

SPECIAL COURSES

NAME	RESIDENCE	CITY ADDRESS
William Adams, Ph.B. (A)	<i>Scarsdale, N. Y.</i>	
Grosvenor Atterbury, A.B. (A)	<i>New York City</i>	7 East 33d st.
Thomas Septimus Austin, E.M. (E E)	<i>New York City</i>	2 Rutherford pl.
Donn Barber, Ph.B. (A)	<i>New York City</i>	45 West 37th st.
Charles Randolph Borland (C)	<i>Oakland, Bergen Co., N. J.</i>	
Albert Isaac Brady (A)	<i>Atlanta, Ga.</i>	34 East 58th st.
Herman Weis Buemming (A)	<i>Milwaukee, Wis.</i>	109 West 47th st.
Howard Crosby Butler, A.M. (A)	<i>Croton Falls, N. Y.</i>	116 West 88th st.
Frederick Lacy Comstock, C.E. (A)	<i>Ballston, N. Y.</i>	626 Lexington ave.
Edgar B. Fox (A)	<i>Columbus, Ohio</i>	140 West 34th st.
Eugene Gaisser (A)	<i>New York City</i>	228 East 10th st.
Albert Morton Gray (A)	<i>Baltimore, Md.</i>	244 East 50th st.
William Rainey Hewitt (E E)	<i>San Francisco, Cal.</i>	130 East 60th st.
William Wallace Hyslop (A)	<i>Chester, Minn.</i>	2362 Eighth ave.
William Augustus Larned (A)	<i>Summit, N. J.</i>	170 Broadway
Leo Märky (C)	<i>Prague, Austria</i>	237 East 17th st.
John Alexander Mathews, B.S. (C)	<i>Washington, Pa.</i>	251 West 54th st.
James Edwin Meek (A)	<i>Columbus, Ohio</i>	104 West 48th st.
Howard Opdyke, A.B. (A)	<i>Plainfield, N. J.</i>	359 Lexington ave.
Stowe Phelps, A.B. (A)	<i>New York City</i>	42 East 26th st.
William Edward Restieaux (A)	<i>Columbus, Ohio</i>	104 West 48th st.
Elias Podryabinick Robinson, B.S. (C)	<i>New York City</i>	314 Henry st.
James Ross (A)	<i>Yonkers, N. Y.</i>	
Russell Selfridge, B.S. (A)	<i>Washington, D.C.</i>	64 East 49th st.
Arthur J. Slade, Ph.B. (E E)	<i>New York City</i>	62 East 66th st.
Horace Claflin Southwick, A.B. (A)	<i>New York City</i>	123 West 55th st.
William Lee Stoddart (A)	<i>New York City</i>	60 West 19th st.
Isaac Newton Phelps Stokes, A.B. (A)	<i>New York City</i>	229 Madison ave.

NAME	RESIDENCE	CITY ADDRESS.
Frederick William Striebinger (A)	<i>Cleveland, Ohio</i>	491 Lexington ave.
Edward Hanford Sturges (A)	<i>New Rochelle, N. Y.</i>	
Edward Albion Titcomb (A)	<i>Cleveland, Ohio</i>	23 West 9th st.
Clark Greenwood Voorhees, Ph.B., A.M. (C)	<i>New York City</i>	59 East 75th st.
William Ruggles Watterson (A)	<i>Cleveland, Ohio</i>	22 West 8th st.
Albert Ernest Weidinger (A)	<i>Englewood, N. J.</i>	
Seabury Brewster Wiley (E E)	<i>East Orange, N. J.</i>	(25 Clinton st.)
Fred Eugene Winter (A)	<i>New Rochelle, N. Y.</i>	
Frank Marion Wright (A)	<i>Mt. Vernon N. Y.</i>	
Albert Osborn Young (C)	<i>Tuckahoe, N. Y.</i>	
Special		38

FELLOWSHIPS

McKIM (Architecture)

NAME	RESIDENCE	CITY ADDRESS
George Oakley Totten, Jr., Ph.B., A.M.	<i>Roseville, Newark, N. J.</i>	(62 North 11th st.)
William Lincoln Thorn, Ph.B.	<i>Yonkers N. Y.</i>	
Fellows		2

SUMMARY

Undergraduate Courses :

Fourth Class	45
Third Class	70
Second Class	71
First Class	138
	— 324

Post-Graduate Courses :

Electrical Engineering—

Second Class	8
First Class	2
	— 10

University Courses :

For Degree of Master of Arts	8
Specials	38
	— 380

Fellows	2
	— 382

Grand Total	382
Deduct for students pursuing more than one course	3
	— 379

SCHOOL OF POLITICAL SCIENCE.

The following departments are represented in the faculty :

HISTORY	PUBLIC LAW
POLITICAL ECONOMY AND	CONSTITUTIONAL LAW
SOCIAL SCIENCE	ADMINISTRATIVE “
POLITICAL PHILOSOPHY	INTERNATIONAL “
PUBLIC FINANCE	ROMAN LAW AND COM- PARATIVE JURISPRUDENCE

Officers of the Faculty

- JOHN W. BURGESS, Ph.D., LL.D., *Dean and ex-Officio Member of the University Council*
 EDWIN R. A. SELIGMAN, LL.B., Ph. D. *Secretary*
 RICHMOND MAYO-SMITH, Ph.D. *Elected Delegate to University Council*

Faculty

SETH LOW, LL.D., *President*

- JOHN W. BURGESS, Ph.D., LL.D., *Professor of History, Political Science, and Constitutional Law*
 RICHMOND MAYO-SMITH, Ph.D., *Professor of Political Economy and Social Science*
 MUNROE SMITH, A.M., J.U.D., *Professor of Roman Law and Comparative Jurisprudence*
 FRANK J. GOODNOW, A.M., LL.B., *Professor of Administrative Law*
 EDWIN R. A. SELIGMAN, LL.B., Ph.D., *Professor of Political Economy and Finance*
 HERBERT L. OSGOOD, Ph.D., *Adjunct Professor of History*
 WILLIAM A. DUNNING, Ph.D., *Adjunct Professor of History and Political Philosophy*
 JOHN BASSETT MOORE, A.B., *Hamilton Fish Professor of International Law and Diplomacy*

Other Officers

FREDERICK W. WHITRIDGE, A.M., LL.B., *Lecturer on the Political History of the State of New York*

FRANKLIN H. GIDDINGS, A.M., *Lecturer on Sociology*

A. C. BERNHEIM, LL.B., Ph.D., *Prize Lecturer, 1891-1894, on New York State and City Politics*

FREDERIC BANCROFT, Ph.D., *Prize Lecturer, 1892-95, on American History*

WILLIAM Z. RIPLEY, Ph.D., *Prize Lecturer, 1893-96*

ADOLPHE COHN, LL.B., A.M., *Professor of Romance Languages. Lecturer on French History*

STEPHEN F. WESTON, A.M., *Assistant in Economics*

Purposes of the School

The School of Political Science was opened on Monday, the fourth day of October, 1880.

The faculty aims to give a complete general view of all the subjects of public polity, both internal and external, from the threefold point of view of history, law, and philosophy. The prime aim is therefore the development of all the branches of the political sciences. The secondary and practical objects are :

(a) To fit young men for all the political branches of the public service.

(b) To give an adequate economic and legal training to those who intend to make journalism their profession.

(c) To supplement, by courses in public law and comparative jurisprudence, the instruction in private municipal law offered by the Faculty of Law.

(d) To educate teachers of political science.

To these ends courses of study are offered of sufficient duration to enable the student not only to attend the lectures and recitations with the professors, but also to consult the most approved treatises upon the political sciences and to study the sources of the same.

Young men who wish to obtain positions in the United States Civil Service—especially in those positions in the Department of State for which special examinations are held—will find it advantageous to follow many of the courses under the Faculty of Political Science. Some of the subjects upon which applicants for these positions are examined are treated very fully in the curriculum of the school. Thus, extended courses of lectures are given on political geography and history, diplomatic history and international law, government and administration.

Full opportunity is given in the School of Arts for the study of the principal modern languages, and all the courses in that school are open to the students of the School of Political Science.

Admission

Any person may attend any or all of the courses under the Faculty of Political Science by matriculating in the President's office and by registering with the Faculty of Political Science.

Students proposing to study under this Faculty are desired to present themselves for registration on the Wednesday next before the first Monday in October.

Candidates for a Degree

Candidates for a degree who desire to take all or a part of their studies under the direction of this Faculty, must have successfully pursued a course of undergraduate study in the School of Arts of Columbia College, or in some other college maintaining an equivalent course of study, to the close of the junior year. Every such case of equivalence shall be considered on its own merits.

Candidates for the degree of Bachelor of Arts must satisfactorily complete a selection of courses of study amounting to fifteen hours per week. Such selection may be made from designated courses offered by the University Faculties of Law, Medicine, Mines, Political Science, Philosophy, or Pure Science. University and professional studies are thus accepted for the bachelor's degree. Law students, for example, may thus take their bachelor's degree and so shorten by one year the time which otherwise would be necessary for the attainment of degrees in both arts and law. For the higher degrees, see pp. 107 and 108.

Fees

See table of contents.

COURSE OF INSTRUCTION

For the courses offered for 1893-94 see departmental statements, as below. For more detailed account of the courses and for the tender of 1894-95, application should be made for circular of the School of Political Science.

History and Political Philosophy, page 57

Public Law and Comparative Jurisprudence, page 64

Economics and Social Science, page 34

Seminaria

Outside of the regular instruction in the various subjects by lecture, it is the intention to furnish the students of the school an opportunity for special investigation of historical, legal, economic, and social questions under the directions of the professor. This is done by means of original papers prepared by the students. The papers are read before the professor and the students, and are then criticised and discussed. There will be at least one seminarium in each subject. The number of meetings and the topics to be discussed are determined each year. Attendance at a seminarium in the major subject is necessary on the part of candidates for the degrees of Master of Arts or Doctor of Philosophy. A seminarium taken by a candidate for the degree of Bachelor of Arts will count for one hour toward the fifteen hours necessary for a degree.

ORDER OF STUDIES

It is recommended by the Faculty that students, who intend to devote their whole time to the courses of study offered by this Faculty, take them in the following order :

First Year

	Hours per week
Constitutional History of Europe, United States, and England	9
Political Economy	3
Science of Finance	2
History of Political Theories	3
Financial History of the United States (2d session)	2
Tariff History of the United States (2d session)	2
Historical and Political Geography	1
Political History of New York (1st session)	2
Relations of England and Ireland (1st session)	1
History of France	1

Second Year

Comparative Constitutional Law of the principal European states and of the United States, Dec. 1st to end of year	3
Institutes of Roman Law	2
History of European Law	2
Comparative Administrative Law of the United States, and of the principal European states	2
History of Political Economy	2
Social Science : Communistic and Socialistic Theories	2
Colonial History of the United States	2
History of Diplomacy (1st session)	2
History of American Diplomacy (2d session)	2
American Political Theories	1

Third Year

Comparative Jurisprudence	2
International Law	2
Conflict of Private Law	1
Law of Taxation (2d session)	2
Law of Municipal Corporations (1st session)	2
Statistics, Methods, and Results	2
Railroad Problems	2
History of United States, 1860-1877	1
Criminal Law	2
Sociology (1st session)	2
Penology (2d session)	2

ADMISSION TO OTHER COURSES

Admission to Courses in the School of Arts

Any student in the School of Political Science may attend any or all of the courses of the School of Arts with the permission of the instructors concerned, without the payment of any further fee. Undergraduate studies of particular value to students in this school are as follows :

	Hours per week
Outline of Mediæval History (1st session)	2
Outline of Modern History (2d session)	2
Outline of European History since 1815 (1st session)	2
Elements of Political Economy (2d session)	2

Admission to University Courses

The Trustees have provided that courses of instruction shall be given to graduates of this and other colleges in a large variety of subjects. Students under the Faculty of Political Science, who are candidates for a degree, may study without additional fee under any other of the University Faculties, viz. : Law, Philosophy, Pure Science, Medicine, and Mines.

Among the cognate courses given by the Faculty of Philosophy are :

History of philosophy, 2 hours a week ; ethics, 2 hours a week ; readings in Gaius and Ulpian, 1 hour a week ; readings in Anglo-Saxon law ; courses in the various modern languages, and others.

Information in regard to the undergraduate studies in the School of Arts and a list of the courses of lectures offered by the several University Faculties for the ensuing year will be furnished on application to the deans of the respective faculties.

The instruction offered by the Faculty of Political Science upon constitutional, administrative, and international law, and upon Roman law and comparative jurisprudence, furnishes the natural and necessary complement to the studies offered by the Faculty of Law. Law is, with us, the chief avenue into politics : and for this reason, if for no other, a complete legal education should include the science of politics. But the importance to the lawyer of the subjects above mentioned does not depend simply on the prospect of a political career. To become a thorough practitioner, the student must acquire a thorough knowledge of public law ; and if he wishes to be anything more than an expert practitioner, if he wishes to know law as a science, some knowledge of other systems than our own becomes imperative. From this point of view, the Roman law is of paramount importance, not merely by reason of its scientific structure, but because it is the basis of all modern systems except the English. Elsewhere than in our own country these facts are uniformly recognized, not in the schemes of legal instruction only, but in the state examinations for admission to the bar.

REGISTER OF STUDENTS

Following each student's name are printed, in italics, the subjects pursued by him under the Faculty of Political Science; if the student is enrolled under another Faculty as well, the name of that Faculty is given in Roman type. The major subject, or the Faculty under which the major subject is taken, is in every case printed first.

NAME	RESIDENCE	CITY ADDRESS
Albert James Adams, Jr. Harvard University, one year. <i>Economics.</i>	<i>New York City</i>	331 West 32d st.
Floyd Appleton College of the City of New York, 1889-1892. Columbia College, 1892-93, <i>Social Science.</i>	<i>New York City</i>	Fordham Heights
George Hume Batchelor Indiana State University, A.B., 1892. University Fellow in Finance. <i>Economics, Social Science, Public Law.</i>	<i>Vernon, Ind.</i>	292 Herkimer st., B'klyn
Roeliff Morton Breckenridge Cornell University, Ph.B., 1892. Seligman Fellow in Political Science. <i>Economics, Comparative Jurisprudence, Social Science.</i>	<i>Hamilton, Ontario</i>	East 76th st. and E. R.
Lester Gladstone Bugbee University of Texas, B.Lit., 1892, M.A., 1893. University Fellow in History. <i>History, Economics.</i>	<i>Pleasant Point, Tex.</i>	232 West 49th st.
Charles Ernst Chadsey Leland Stanford Junior University, A.M., 1892, A.B., 1893. University Fellow in Finance and History. <i>History, Economics.</i>	<i>Palo Alto, Cal.</i>	153 East 51st st.
José Edward Chaves University of Notre Dame, Indiana, four years. <i>Public Law, Social Science, History.</i>	<i>New Mexico</i>	116 West 14th st.
Alexander Lyman Churchill, Jr. <i>Economics, Public Law, History.</i>	<i>Plympton, Mass.</i>	623 Lexington ave.
Robert Codman, Jr. Harvard University, A.B., 1882, LL.B., 1885. Student in General Theological Seminary. <i>Social Science.</i>	<i>Boston, Mass.</i>	Chelsea sq.
Alexander Griswold Cummins, Jr. Swarthmore College, A.B., 1889. Student in General Theological Seminary. <i>Philosophy, Social Science.</i>	<i>Smyrna, Del.</i>	Chelsea sq.

NAME	RESIDENCE	CITY ADDRESS
Harry Alonzo Cushing Amherst College, A.B., 1891. <i>History, Economics.</i>	New York City	247 West 71st st.
James Gideon Ditmars Denison College, A.B., 1882. Student in Union Theological Seminary. <i>Philosophy, Ecclesiastical History, Social Science.</i>	Brooklyn, N. Y.	(268 Rutledge st.)
Albert Frost Earnshaw Princeton College, A.B., 1892. Student in Union Theological Seminary. <i>Social Science.</i>	Lowville, N. Y.	41 East 69th st.
Henry Crosby Emery Bowdoin College, A.B., 1892; Harvard University, A.M., 1893. University Fellow in Economics. <i>Economics, Social Science, History.</i>	Ellsworth, Me.	East 76th st. and E. R.
George Hooper Ferris Brown University, A.B., 1891; A.M., 1893. Student in Union Theological Seminary. <i>Philosophy, Ecclesiastical History, Social Science.</i>	Milwaukee, Wis.	41 East 69th st.
Philip Green Gossler Pennsylvania State College, A.B., 1890. <i>Mines, Economics.</i>	Brooklyn, N. Y.	(107 Montague st.)
Alexander Henry Geismar University of Cincinnati, B.S., 1882. <i>Historical and Political Geography.</i>	Brooklyn, N. Y.	(358 Fourth st.)
Appleton Grannis Columbia College, A.B., 1893. <i>Social Science.</i>	New York City	Chelsea sq.
Frederick Smith Hall Wesleyan University, A.B., 1893. <i>History, Economics.</i>	Montclair, N. J.	(92 Midland ave.)
Christopher Robert Hamlin Boston University, A.B., 1893. <i>Economics, Social Science, Philosophy.</i>	New York	781 Park ave.
William James Hannah University of Indiana, A.B., 1890; Leland Stanford Junior University, A.M., 1893. University Fellow in Social Science. <i>Economics, Social Science, History.</i>	Davison, Mich.	137 East 50th st.
Frederick Berg Hartranft Vitzthumgymnasium, Dresden, Germany. Friedrichsgymnasium, Breslau, Germany. <i>Economics, History, Political Philosophy.</i>	Hartford, Conn.	128 East 54th st.
Willett Nicoll Hawkins, Jr. Columbia College, A.B., 1893. Student in General Theological Seminary. <i>Social Science.</i>	West New Brighton, S. I.	
Berry Hiss Lehigh University from Sept., 1892 to April, 1893. <i>History, American Diplomacy.</i>	Baltimore, Md.	East Orange, N. J.
Maurice Jacobson Gymnasium of Riga, 1879-85. University of Moscow, 1885-89. <i>Economics, Social Science, Comparative Jurisprudence.</i>	New York City	313 East 46th st.

NAME	RESIDENCE	CITY ADDRESS
Shizno Kondo	<i>Sagami, Japan</i> Philosophical School of Tokio, Japan, 1888. Ohio Wesleyan University, B.S., 1891. <i>Economics, Social Science, Constitutional Law.</i>	180 West End ave.
John Neher Lewis, Jr.	<i>New York City</i> Williams College, A.B., 1889. <i>Social Science.</i>	207 East 16th st.
William E. McCord	<i>Vandalia, Ill.</i> Blackburn University, Carlinville, Ill., A.B., 1882, A.M., 1885. Student in Union Theological Seminary. <i>Social Science, Economics.</i>	14 East 69th st.
James Alexander McLean	<i>New York City</i> University of Toronto, A.B., 1892. Columbia College, A.M., 1893. University Fellow in Comparative Jurisprudence. <i>Economics, Jurisprudence, Social Science.</i>	595 Lexington ave.
Arthur Mayer	<i>New York City</i> Columbia Grammar School. Dr. Sachs' Collegiate Institute. <i>History, Economics.</i>	241 West 131st st.
Richard Spencer Palmer	<i>Sing Sing, N. Y.</i> Cornell University, seven months, Law course. <i>History.</i>	
Walter Judd Scott	<i>New York City</i> Albion College, Mich., one year. Harvard University, one year. <i>Economics, International Law, Comparative Jurisprudence.</i>	21 East 130th st.
Theodore Sedgwick	<i>New York City</i> Harvard University, A.B., 1886. <i>Social Science.</i>	207 East 16th st.
DeWitt J. Seligman	<i>New York City</i> Columbia College, Ph.B., 1883, LL.B., 1884. <i>International Law.</i>	328 West 58th st.
William Robert Shepherd	<i>Brooklyn, N. Y.</i> Columbia College, A.B., 1893. <i>History, Comparative Constitutional Law.</i>	(325 Macon st.)
Joseph Gould Snyder	<i>Brooklyn, N. Y.</i> Columbia College, A.B., 1886. Union Theological Seminary, D.B., 1889. <i>Economics, Political Philosophy, Social Science.</i>	(90 Sterling pl.)
Arthur Spaulding	<i>New York City</i> Rutgers College, A. B., 1890. Student in Union Theological Seminary. <i>Social Science.</i>	41 East 69th st.
Fred Toch	<i>New York City</i> Steven Institute. <i>History, Economics.</i>	39 East 63d st.
Ernest A. von Fintel	<i>New York City</i> College of the City of New York, B.S., 1892. Pure Science ; Philosophy ; <i>Economics.</i>	105 East 90th st.
Francis Walker	<i>Boston, Mass.,</i> Massachusetts Institute of Technology, B.S., 1891. Columbia College, M.A., 1892. University Fellow in Economics. <i>Economics, Social Science, International Law.</i>	55 West 45th st.
Frederick Augustus Wood	<i>Montpelier, Vt.,</i> Dartmouth College, A.B., 1886. Seligman Fellow in Political Science. <i>Economics, Social Science, History.</i>	233 West 49th st.
Total		41

MEMBERS OF THE SENIOR CLASS IN THE SCHOOL OF ARTS, PURSUING COURSES OF INSTRUCTION FOR THE DEGREE OF A.B. IN THE DEPARTMENTS SPECIFIED.

NAME	RESIDENCE	CITY ADDRESS
David D. Ackerman <i>Criminal Law.</i>	<i>Paterson, N. J.</i>	(274 Hamilton ave.)
Paul Armitage <i>Criminal Law.</i>	<i>Bay Shore, L. I.</i>	295 Church st.
George Henry Broughton, Jr. <i>History.</i>	<i>New York City</i>	The Hanover, 15th st., and Fifth ave.
Russell Ely Burke <i>Criminal Law, Economics.</i>	<i>New York City</i>	17 East 55th st.
George Stanislaus Connell <i>Criminal Law.</i>	<i>New York City</i>	154 West 87th st.
Harold Coburn Cook <i>Criminal Law.</i>	<i>Flushing, N. Y.</i>	
Eugene Howell Daly <i>Criminal Law.</i>	<i>New York City</i>	2050 Madison ave.
Alexander White Doolittle <i>Criminal Law.</i>	<i>Waterville, N. Y.</i>	258 West 55th st.
Harold S. Emerson <i>Criminal Law, History.</i>	<i>Brooklyn, N. Y.</i>	(125 Gates ave.)
Joseph Peter Grace <i>Criminal Law, History.</i>	<i>New York City</i>	31 East 79th st.
Otto Theodore Hess <i>Criminal Law, Economics.</i>	<i>New York City</i>	307 West 86th st.
Philip R. M. Hildreth <i>Criminal Law, History.</i>	<i>New York City</i>	48 Irving pl.
James C. Howell <i>Criminal Law.</i>	<i>Highland Mills, N. Y.</i>	
Francis Edward Hyslop <i>Economics, History.</i>	<i>Delphi, Ind.,</i>	171 West 81st st.
David Stewart Iglehart <i>Criminal Law.</i>	<i>New York City</i>	106 East 86th st.
Shepherd Knapp, Jr. <i>Economics.</i>	<i>New York City</i>	266 Lexington ave.
Walter Henry Liebmann <i>History, Economics.</i>	<i>New York City</i>	32 East 72d st.
Campbell Erie Locke <i>Criminal Law.</i>	<i>New York City</i>	23 West 53d st.
Russell Hillard Loines <i>History, Political Philosophy, Economics.</i>	<i>Brooklyn, N. Y.</i>	(26 Garden pl.)
Frederick F. Neuman <i>Criminal Law, History.</i>	<i>New York City</i>	604 Lexington ave.
Carloss Hinckley Oliver <i>Criminal Law, Economics.</i>	<i>Burlington, Vt.</i>	313 West 50th st.

NAME	RESIDENCE	CITY ADDRESS
Warren Waverley Phelan <i>History, Political Philosophy, Economics.</i>	<i>Brooklyn, N. Y.</i>	(108 S. Fifth st.)
Albert Capron Phillips <i>History, Economics.</i>	<i>New York City</i>	205 Boulevard
Milton Stanley Roth <i>Economics.</i>	<i>New York City</i>	65 East 61st st.
Edward Sandford <i>History, Political Philosophy, Economics.</i>	<i>Yonkers, N. Y.</i>	
Oscar R. Seitz <i>History, Criminal Law, Economics.</i>	<i>New York City</i>	1186 Lexington ave.
Harry Judson Shaw <i>Economics.</i>	<i>Rockland, Me.</i>	175 East 71st st.
John Dempster Sherman, Jr. <i>Economics.</i>	<i>Peekskill, N. Y.</i>	175 East 71st st.
Henry Mervin Shradz <i>Criminal Law.</i>	<i>New York City</i>	8 East 66th st.
Frederick Herbert Sill <i>Economics, History.</i>	<i>New York City</i>	243 West 45th st.
Clarence Bishop Smith <i>History, Economics.</i>	<i>New York City</i>	101 East 69th st.
Henry Ayres Uterhart <i>Criminal Law, Economics.</i>	<i>New York City</i>	552 East 85th st.
Frederic De Witt Wells <i>Criminal Law, Economics.</i>	<i>New York City</i>	Hotel Waldorf
Frederick Amaziah Wright <i>History, Political Philosophy, Economics.</i>	<i>New York City</i>	110 West 76th st.

Total. 34

CANDIDATES FOR THE DEGREE OF LL.B. TAKING PART OF THEIR STUDIES UNDER THIS FACULTY.

NAME	RESIDENCE	CITY ADDRESS
Edward Albert Alexander College of the City of New York, B.S., 1892. <i>Political Philosophy.</i>	<i>New York City</i>	147 East 62d st.
Berkeley Clarence Austin College of the City of New York, A.B., 1893. <i>Criminal Law.</i>	<i>Cranford, N. J.</i>	
Shelley Fowler Austin Cranford, N. J., High School. <i>Criminal Law.</i>	<i>Cranford, N. J.</i>	
William Thomas Aycock University of South Carolina, A.B., 1889. <i>Criminal Law.</i>	<i>Wedgfield, S. C.</i>	618 Lexington ave.
Benjamin Charles Bachrach University of Notre Dame, Ill., A.B., 1892. <i>Criminal Law.</i>	<i>Chicago, Ill.</i>	120 East 85th st.

NAME	RESIDENCE	CITY ADDRESS
James Dixon R. Baldwin Harvard University, A.B., 1891. <i>International Law.</i>	<i>New York City</i>	17 East 35th st.
David Bandler Columbia College, A.B., 1892. <i>Administrative Law, Comparative Jurisprudence.</i>	<i>New York City</i>	212 Edgecombe ave.
Henry Burr Barnes, Jr. Yale University, A.B., 1893. <i>Economics, Criminal Law.</i>	<i>New York City</i>	5 East 44th st.
Max Jacob Bernheim Columbia College, A.B., 1893. <i>Constitutional Law.</i>	<i>New York City</i>	111 East 78th st.
Solomon Charles Bernstein College of the City of New York, B.S., 1892. <i>History, Economics.</i>	<i>New York City</i>	138 Henry st.
Charles Seth Boardman Wilson & Kellogg School. <i>Criminal Law.</i>	<i>New York City</i>	102 East 57th st.
Alfred Wreaks Booraem Brooklyn Polytechnic Institute, eight years. <i>Criminal Law.</i>	<i>Brooklyn, N. Y.</i>	48 West 82d st.
Conrad Braker <i>Constitutional Law.</i>	<i>Brooklyn, N. Y.</i>	(607 — 111th st.)
Alanson Tuthill Briggs, Jr. Columbia College, A.B., 1892. <i>Constitutional Law, Political Philosophy, Administrative Law.</i>	<i>New York City</i>	120 West 93d st.
Ward Brower <i>Criminal Law.</i>	<i>New York City</i>	Riverside Drive and 109th st.
Edward Stelle Brownson, Jr. Columbia College, A.B., 1892, A.M., 1893. <i>Constitutional Law, Comparative Jurisprudence.</i>	<i>Brooklyn, N. Y.</i>	(49 Garden pl.)
Herbert Spencer Brussel College of the City of New York to Junior Class. <i>Criminal Law.</i>	<i>New York City</i>	10 East 81st st.
Joseph Edmond Bullen Brown University, A.B., 1890. <i>History, Comparative Jurisprudence.</i>	<i>Newton Centre, Mass.</i>	155 West 45th st.
Ferdinand Ezra M. Bullowa College of the City of New York, A.B., 1892; Columbia, A.M., 1893. <i>Political Philosophy, Constitutional Law, Comparative Jurisprudence.</i>	<i>New York City</i>	46 East 66th st.
Nathan Platt Bushnell <i>Constitutional Law.</i>	<i>Montrose, N. Y.</i>	
Malcolm John Cameron Johns Hopkins University, A.B., 1891. <i>International Law, Political Philosophy, Comparative Jurisprudence.</i>	<i>New York City</i>	493 Lexington ave.
John Francis Carew Columbia College, A.B., 1893. <i>Political Philosophy, History.</i>	<i>New York City</i>	225 East 58th st.

NAME	RESIDENCE	CITY ADDRESS
William Carl	<i>New York City</i>	247 West 133d st.
College of the City of New York, A.B., 1891; Columbia College, A.M., 1892. <i>Comparative Jurisprudence.</i>		
James Dickson Carr	<i>New York City</i>	495 Sixth ave.
Rutgers College, A.B., 1892. <i>Constitutional Law, History.</i>		
Thomas Ives Chatfield	<i>New York City</i>	173 Fifth ave.
Yale University, A.B., 1893. <i>Economics, Criminal Law.</i>		
Paul Clagstone	<i>New York City</i>	30th st. and Fifth ave.
Harvard University, A.B., 1893. <i>Criminal Law.</i>		
Solomon Cohn	<i>New York City</i>	44 Bowery
College of the City of New York, A.B., 1893. <i>Economics, Criminal Law.</i>		
Alfred Arthur Cook	<i>New York City</i>	152 East 71st st.
College of the City of New York, B.S., 1892. <i>History, Constitutional Law.</i>		
Joseph Jacob Corn	<i>New York City</i>	23 East 128th st.
Wiener Institute, New York City. <i>Economics, Criminal Law, History.</i>		
Sidney Clinton Crane	<i>Plainfield, N. J.</i>	(315 East 2d st.)
Plainfield, N. J., High School. <i>Criminal Law.</i>		
William Beers Crowell	<i>New York City</i>	1044 Fifth ave.
School of Arts, Columbia, two years. <i>Criminal Law.</i>		
Lee Sumner Day	<i>Elyria, O.</i>	64 West 49th st.
Oberlin College, 1889-92. <i>Criminal Law, Economics.</i>		
Henry Temple Dodge	<i>New York City</i>	209 West 118th st.
Burlington High School. <i>Criminal Law.</i>		
John Hugh Doherty	<i>Kansas City, Mo.</i>	68 West 49th st.
Notre Dame Indiana University. <i>Criminal Law.</i>		
Eugene J. Donnelly	<i>Brooklyn, N. Y.</i>	(111 N. Second st.)
St. Francis Xavier's, three years. <i>History, Economics, Criminal Law.</i>		
Archibald Douglas	<i>Tarrytown, N. Y.</i>	33 West 42d st.
Woodbridge Preparatory School, two years; Columbia School of Mines, two years; School of Philosophy, one year. <i>Criminal Law.</i>		
William C. Dunbar	<i>Brooklyn, N. Y.</i>	(940 Pacific st.)
Brooklyn Boys' High School, three years. <i>Economics, Criminal Law.</i>		
Edward Darwin Edson	<i>Duluth, Minn.</i>	491 Lexington ave.
Olivet College, Michigan, B.S., 1892. <i>Administrative Law, Comparative Jurisprudence.</i>		

NAME	RESIDENCE	CITY ADDRESS
Horatio Seymour Eisman College of the City of New York, A.B., 1893. <i>History, Economics.</i>	<i>New York City</i>	124 East 74th st.
Hermann George Friedmann College of the City of New York, B.S., 1893. <i>History, Economics.</i>	<i>New York City</i>	922 East 138th st.
Joseph Whitney Ganson Harvard University, A.B., 1892. <i>Criminal Law.</i>	<i>New York City</i>	47 West 33d st.
Charles Henry George Bordentown Military Institute ; Orange (N. J.), High School. <i>Criminal Law.</i>	<i>Orange, N. J.</i>	(24 Reynolds terrace)
Lawrence George Goodhart College of the City of New York. <i>International Law, Comparative Jurisprudence.</i>	<i>New York City</i>	114S Park ave.
Horace Mordecai Graff College of the City of New York, A.B., 1893. <i>History, Economics, Criminal Law.</i>	<i>New York City</i>	40 West 83d st.
Wells Hamilton St. Paul's School, Garden City, L. I. ; Brooklyn Latin School. <i>Criminal Law.</i>	<i>Brooklyn, N. Y.</i>	(435½ Classon ave.)
John Henry Hammond Yale University, Ph.B. <i>Constitutional Law.</i>	<i>St. Paul, Minn.</i>	29 East 28th st.
Sydney W. Hart Public High School, Hoboken, N. J. <i>Constitutional Law.</i>	<i>Hoboken, N. J.</i>	(232 Washington st.)
Emanuel Hertz College of the City of New York, A.B., 1892. <i>European History, American History, Constitutional Law.</i>	<i>New York City</i>	449 East 80th st.
Harry Mason Hewitt Wilson & Kellogg's School. <i>Criminal Law.</i>	<i>New York City</i>	341 East 30th st.
Herman August Heydt St. Francis Xavier's College, Ph.B., 1893. <i>Criminal Law, Social Science, History.</i>	<i>New York City</i>	221 West 43d st.
Charles Whitman Hills, Union College, C.E., 1892. <i>Criminal Law.</i>	<i>Manchester, N. H.</i>	Montclair, N. J.
Eugene Baker Hoffman Buffalo High School, three years. <i>Constitutional Law.</i>	<i>Bozeman, Mont.</i>	675 Lexington ave.
Walter Baylis Hopping Morristown, High School, 1890-93. <i>Criminal Law.</i>	<i>Hanover, N. J.</i>	
Edwin Sumner Hunt Amherst College, A.B., 1890. <i>Administrative Law.</i>	<i>Charlestown, N. H.</i>	68 West 49th st.
Harold Hurd Hale's School. <i>Criminal Law.</i>	<i>Dorchester, Mass.</i>	69 West 48th st.

NAME	RESIDENCE	CITY ADDRESS
Robert Seldon Huse Lehigh University School of Mines. <i>Criminal Law.</i>	<i>Highland Falls, N. Y.</i>	8 West 34th st.
Benjamin J. Jarrett Pittsburgh Central High School. <i>Administrative Law, Comparative Jurisprudence.</i>	<i>Pittsburgh, Pa.</i>	26 East 47th st.
Edwin James Johnson Richfield Spa Union School. <i>History, Economics.</i>	<i>Richfield Spa, N. Y.</i>	920 Eighth ave.
Franklin Johnson, Jr. Harvard University, Freshman and Sophomore Years. <i>Criminal Law.</i>	<i>Chicago, Ill.</i>	128 East 52d st.
Norman Gildersleeve Johnson Columbia College, A.B., 1893. <i>Constitutional Law.</i>	<i>New York City</i>	480 Mott ave.
Edward Renshaw Jones Harvard University, A.B., 1893. <i>Criminal Law.</i>	<i>New York City</i>	20 N. Washington sq.
Frederick Winston Keasbey Columbia College, A.B., 1892. <i>Constitutional Law, Administrative Law, Economics.</i>	<i>Newark, N. J.</i>	(Stratford pl.)
William C. B. Kemp Columbia College, 1868. <i>Constitutional Law.</i>	<i>New York City</i>	Hotel "New Netherlands"
Norman William Kerngood University of Virginia, two years. Baltimore City College, four years. <i>Constitutional Law.</i>	<i>Baltimore, Md.</i>	72 West 49th st.
Francis Corey Keyes Georgetown University, A.B., 1893. <i>Criminal Law.</i>	<i>San Francisco, Cal.</i>	40 East 51st st.
Harvey Roberts Kingsley Columbia College, A.B., 1893. <i>Criminal Law.</i>	<i>Rutland, Vt.</i>	588 Fifth ave.
Arthur Charles Kletzschn Columbia College, A.B., 1893. <i>Economics, History.</i>	<i>Milwaukee, Wis.</i>	34 East 60th st.
Arthur Knox College of the City of New York, A.B., 1892. <i>Constitutional Law, Political Philosophy.</i>	<i>New York City</i>	472 Mott ave.
William R. A. Koehl New Windsor College, Md., three years. <i>History, Economics, Criminal Law.</i>	<i>New York City</i>	137 East 50th st.
Edgar Julius Kohler College of the City of New York, A.B., 1893. <i>History, Economics.</i>	<i>New York City</i>	115 East 71st st.
Joseph Larocque, Jr. Columbia College, A.B., 1892; A.M., 1893. <i>Criminal Law, Economics.</i>	<i>New York City</i>	126 East 34th st.

NAME	RESIDENCE	CITY ADDRESS
Henry M. Levin College of the City of New York, B.S., 1893. <i>Criminal Law.</i>	<i>New York City</i>	317 East 79th st.
Louis Levy College of the City of New York, A.B., 1893. <i>History, Economics.</i>	<i>New York City</i>	119 East 122d st.
Edward Livingston, Jr. Harvard University, A.B., 1893. <i>Economics, Criminal Law.</i>	<i>New York City</i>	17 East 74th st.
Charles Edward Francis McCann Columbia Grammar School, 1890-92. <i>Criminal Law.</i>	<i>New York City</i>	"Hotel Lincoln"
Cornelius Patrick McIntyre Spring Hill College, Mobile, Ala., A.B., 1892. <i>Criminal Law, History.</i>	<i>Montgomery, Ala.</i>	113 East 24th st.
Samuel Manson High School of Syracuse. <i>Criminal Law.</i>	<i>Syracuse, N. Y.</i>	63 East 110th st.
Robert Mickle Miles, Jr. Seton-Hall College, A.B., 1893. <i>Criminal Law.</i>	<i>South Orange, N. J.</i>	
John Hill Morgan Yale University, A.B., 1893. <i>Criminal Law.</i>	<i>Brooklyn, N. Y.</i>	(7 Pierrepont st.)
Frederick W. Mount Steven's Preparatory School. <i>Comparative Jurisprudence.</i>	<i>Jersey City, N. J.</i>	(202 Harrison ave.)
Henry Necarsulmer College of the City of New York, B.S., 1891. Columbia College, A.M., 1893. <i>International Law.</i>	<i>New York City</i>	109 East 70th st.
Louis Nesbit <i>Criminal Law.</i>	<i>New York City</i>	58 West 39th st.
Adam Gordon Norrie Columbia College, A.B., 1891. <i>Criminal Law.</i>	<i>New York City</i>	377 Fifth ave.
Sheridan Shook Norton St. Francis Xavier, A.B., 1893. <i>Criminal Law.</i>	<i>New York City</i>	161 West 71st st
James F. O'Beirne St. Francis Xavier, A.B., 1893. <i>History, Economics, Criminal Law.</i>	<i>New York City</i>	201 East 20th st.
Nathan Ottinger College of the City of New York, B.S., 1892. <i>History, Diplomacy, Philosophy.</i>	<i>New York City</i>	110 East 61st st.
Milton Cornelius Palmer Cornell University, B.S., 1881. <i>Constitutional Law.</i>	<i>Sing Sing, N. Y.</i>	

NAME	RESIDENCE	CITY ADDRESS
Terry Parker Yale University, 1889-91. <i>Administrative Law, Comparative Jurisprudence.</i>	<i>Atchison, Kan.</i>	64 West 49th st.
Charles Rogers Pelgram <i>Criminal Law.</i>	<i>New York City</i>	31 West 91st st.
Edward Pfeffer <i>Constitutional Law, History.</i>	<i>New York City</i>	421 St. Nicholas ave.
Waldron Kintzing Post Harvard University, A.B., 1890. <i>International Law.</i>	<i>Bayport, L. I.</i>	21 Washington sq.
Edward Anson Prentice High School, Montreal, Can. <i>Criminal Law.</i>	<i>Portage, N. Y.</i>	12 East 47th st.
Harold Sturges Rankine Hobart College, A.B., 1892. <i>Criminal Law.</i>	<i>Geneva, N. Y.</i>	80 Washington sq., East
Edward Stephen Rawson Harvard University, A.B., 1890. <i>International Law, Constitutional Law, Economics.</i>	<i>Cincinnati, O.</i>	58 West 57th st.
Raymond Reubenstein College of the City of New York, A.B., 1892. <i>History, Constitutional Law.</i>	<i>New York City</i>	57 East Broadway
Lester R. Riggs University of Utah, two years. <i>Administrative Law.</i>	<i>Salt Lake City, Utah</i>	144 East 34th st.
Alfred L. Ross <i>Conflict of Private Law.</i>	<i>Florence, Mass.</i>	361 Lexington ave.
Frederick H. Sanborn Polytechnic Institute of Brooklyn, A.B., 1893. <i>Criminal Law.</i>	<i>Brooklyn, N. Y.</i>	(13 Spencer pl.)
Jacob Schattman, Jr. Dr. Sachs' Institute. <i>Criminal Law.</i>	<i>New York City</i>	14 East 126th st.
Joseph Martin Schenck Binghamton Central High School. <i>Economics, Criminal Law.</i>	<i>Binghamton, N. Y.</i>	136 East 61st st.
Peter Schmuck College of the City of New York, B.S., 1893. <i>History, Comparative Jurisprudence, Economics.</i>	<i>New York City</i>	523 West 39th st.
Edward Samuel Seidman Buchtel College, O., A.B., 1893. <i>Criminal Law, Economics.</i>	<i>New York City</i>	315 East 70th st.
Oliver Wadworth Shead Harvard University, A.B., 1893. <i>Criminal Law.</i>	<i>Eastport, Me.</i>	63 West 48th st.
Harry George Smith College of the City of New York, four years. <i>Criminal Law.</i>	<i>New York City</i>	924 Third ave.

NAME	RESIDENCE	CITY ADDRESS
Francis Raymond Stark St. Francis Xavier's College, A.B., 1893. <i>Criminal Law, History.</i>	<i>New York City</i>	Madison Avenue Hotel
George Edwin Starr St. Austin School, West New Brighton, S. I. <i>Criminal Law.</i>	<i>New York City</i>	313 West 45th st.
William Law Stout Jersey City High School, three years. <i>Criminal Law, Economics.</i>	<i>Jersey City, N. J.</i>	(14 Virginia ave.)
Jerome Herman Steinberger Wilson & Kellogg's School. <i>Criminal Law.</i>	<i>New York City</i> College of the City of New York.	153 East 61st st.
Solomon Marcuse Stroock College of the City of New York, B.S., 1891. Columbia College, A.M., 1892. <i>Public Law, Comparative Jurisprudence.</i>	<i>New York City</i>	156 East 80th st.
Louis Stürcke Graduate of Realschule at Bremen, Germany, testimonium maturitatis. <i>Comparative Jurisprudence, Constitutional Law, Administrative Law.</i>	<i>New York City</i>	423 East 84th st.
Algernon Thomas Sweeney, Michigan Agricultural College, B.S., 1891. <i>History, Constitutional Law.</i>	<i>Burrows, Mich.</i>	(15 Orleans st., Newark, N. J.)
Russell Lord Tarbox, Williams College, A.B., 1892. <i>Administrative Law.</i>	<i>Batavia, N. Y.</i>	30 East 126th st.
Robert William Thompson, Jr., College of the City of New York, A.B., 1893. <i>History, Economics.</i>	<i>New York City</i>	229 West 97th st.
Edward LeClerk Vogt, Jr. Morristown High School, 3 years. <i>Criminal Law.</i>	<i>Morristown, N. J.</i>	
Sampson Herbert Weinhandler College of the City of New York, A.B., 1893. <i>Criminal Law.</i>	<i>New York City</i>	319 East 17th st.
Ernest Ingersol White Cornell University, B.L., 1893. <i>Criminal Law.</i>	<i>Syracuse, N. Y.</i>	50 West 48th st.
Lewis Morris White Binghamton Central High School. <i>Criminal Law, Economics.</i>	<i>Binghamton, N. Y.</i>	321 East 42d st.
Samuel Lee Wolff Harvard University, A.B., 1892. <i>History, Criminal Law.</i>	<i>New York City</i>	125 East 73d st.
Total.....		118

STUDENTS NOT CANDIDATES FOR A DEGREE STUDYING UNDER THE TWO FACULTIES OF POLITICAL SCIENCE AND LAW.

Harvey Montague Apfelbaum Gloversville High School. <i>History, Criminal Law.</i>	<i>Gloversville, N. Y.</i>	493 Lexington ave.
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NAME	RESIDENCE	CITY ADDRESS
Allen Campbell Bakewell Preparatory School of Western University of Pennsylvania. <i>History.</i>	<i>Pittsburgh, Pa.</i>	Buckingham Hotel
John Milton Boone <i>Criminal Law.</i>	<i>St. Clair, Pa.</i>	Tarrytown, N. Y.
Thomas Morrison Carnegie St. Paul's School, Concord, N. H. <i>Criminal Law.</i>	<i>Pittsburgh, Pa.</i>	Imperial Hotel
John Campbell Dorland Utica Private Academy. <i>Criminal Law.</i>	<i>Utica, N. Y.</i>	Yonkers (148 N. B'way)
Frank Wright Duryea United States Military Academy. <i>Criminal Law.</i>	<i>Glen Cove, L. I.</i>	
Sydney Edgar Eads Wesleyan University, Ohio, one year ; De Pauw University, one year. <i>Criminal Law.</i>	<i>Paris, Ill.</i>	Grand Union Hotel
Edward Oliver Gordon <i>Criminal Law.</i>	<i>Cleveland, O.</i>	650 Madison ave.
Alexander I. Hahn <i>Criminal Law.</i>	<i>New York City</i>	383 Eighth st.
Joseph Marc Harris <i>Criminal Law.</i>	<i>New York City</i>	111 East 71st st.
Lee Hills University of Virginia, 1891-2. <i>Criminal Law.</i>	<i>New York City</i>	138 Madison ave.
Renwick Clifton Hurry Berkeley School, 1887-93. <i>Criminal Law.</i>	<i>New York City</i>	30 West 17th st.
Herbert Seymour Husted St. Mark's School, Southborough, Mass. <i>Criminal Law.</i>	<i>Brooklyn, N. Y.</i>	(127 Remsen st.)
William Henry Irvine <i>Criminal Law.</i>	<i>Salt Lake City, Utah</i>	Buckingham Hotel
Pearsall Bradhurst Jackson Berkeley School, 1887-93. <i>Criminal Law.</i>	<i>New York City</i>	308 Madison ave.
Frederic Kohlmeyer Columbia Grammar and Condon Schools. <i>Criminal Law.</i>	<i>Town of Union, N. Y.</i>	(146 Palisade ave.)
Leonidas Moreau Lawson, Jr. St. Paul's School, Concord, N. H. ; Drisler School. <i>Criminal Law</i>	<i>New York City</i>	15 East 67th st.
James Elder Leech <i>History.</i>	<i>Memphis, Tenn.</i>	422 West End ave.
George Washington MacAdam, Jr. Dwight School, 1891-92. <i>Criminal Law.</i>	<i>New York City</i>	131 West 122d st.

NAME	RESIDENCE	CITY ADDRESS
George D. Mackay, Jr. <i>Criminal Law.</i>	<i>Fersey City, N. J.</i>	(110 Oak st.)
Walter Willis Morse Cook Academy, Havana, N.Y. <i>Criminal Law.</i>	<i>New York City</i> Peekskill Military Academy.	3 East 19th st.
Frederick Secor Mullen Staten Island Academy. <i>Criminal Law.</i>	<i>New York City</i>	114 Nassau st.
George Frederick Parsons Mt. Pleasant Institute. <i>Criminal Law.</i>	<i>New York City</i>	429 West 57th st.
Henry Evelyn Pierrepont, Jr. Brooklyn Latin School, 1884-86, 1892-93. <i>Criminal Law.</i>	<i>Brooklyn, N. Y.</i> St. Paul's School, Garden City, 1886-92.	(216 Columbia Heights)
Lothrop Randolph Cutler School. St. Mark's School, Southborough, Mass. <i>Criminal Law.</i>	<i>New York City</i>	Mount St. Vincent
George Ross College of the City of New York, 1890-93. <i>Public Law.</i>	<i>New York City</i>	128 West 132d st.
George J. Schleicher <i>History, Economics, Criminal Law.</i>	<i>Cuero, Tex.</i>	623 Lexington ave.
Edward Elliot Swadener St. Paul's School, Garden City, L. I. <i>Criminal Law.</i>	<i>Dayton, O.</i>	138 West 42d st.
George Ogden Thomas St. John's School, Salina, Kan. <i>Criminal Law.</i>	<i>Topeka, Kan.</i>	63 West 50th st.
Francis Nathaniel Trevor Detroit High School. University of Michigan, LL.B., 1893. <i>History, Economics, Constitutional Law, Administrative Law.</i>	<i>Detroit, Mich.</i>	232 West 49th st.
Inglis Moore Uppercu Polytechnic Institute, Brooklyn, N. Y., 1892-3. <i>Criminal Law.</i>	<i>New York City</i>	119 Nassau st.
Herman James Wagner <i>Criminal Law.</i>	<i>Nyack, N. Y.</i>	
Charles Fraprie Wood Brooklyn Polytechnic Institute. <i>Economics, Criminal Law.</i>	<i>Brooklyn, N. Y.</i>	(85 Wilson st.)

Total.....33

GRAND TOTAL ENROLLED UNDER THE UNIVERSITY FACULTY OF POLITICAL
SCIENCE.....226

SUMMARY OF GRADUATE STUDENTS

College of the City of New York..	23	Massachusetts Institute of Tech-	
Columbia College.....	21	nology	1
Harvard University.....	12	Michigan University.....	1
St. Francis Xavier.....	4	Notre Dame University.....	1
Yale University	4	Olivet College.....	1
Cornell University.....	3	Pennsylvania State College.....	1
Amherst College.....	2	Polytechnic Institute, Brooklyn,	
Brown University.....	2	N. Y.....	1
Leland Stanford, Junior, University	2	Swarthmore College.....	1
Rutgers College.....	2	Seton-Hall College.....	1
Wesleyan University.....	2	Spring Hill College, Ala.....	1
Williams College.....	2	Union College.....	1
Blackburn University, Illinois....	1	Union Theological Seminary.....	1
Boston University.....	1	University of Cincinnati....	1
Bowdoin College.....	1	University of Indiana.....	1
Buchtel College, Ohio.....	1	University of South Carolina....	1
College of New Jersey.....	1	University of Texas.....	1
Dartmouth College.....	1	University of Toronto.....	1
Denison College.....	1		
Georgetown University.....	1	40 Institutions	
Hobart College.....	1	Total	107
Indiana State University.....	1	Deduct for duplication....	8
Johns Hopkins University.....	1		
Michigan Agricultural College....	1	Total	99

DEGREES HELD BY GRADUATE STUDENTS

Bachelor of Arts....	75
Bachelor of Philosophy.....	4
Bachelor of Science.....	15
Bachelor of Divinity.....	1
Bachelor of Laws.....	4
Bachelor of Letters.....	2
Civil Engineer.....	1
Master of Arts.....	14

 116

Deduct for students holding more than one degree..... 17

 99

Students without degrees, other than Seniors in the School

of Arts..... 93

Seniors in the School of Arts..... 34

 226

SCHOOL OF PHILOSOPHY

The following departments are represented in the Faculty :

ENGLISH	LATIN LANGUAGE AND LIT-
ENGLISH LANGUAGE AND	ERATURE
LITERATURE	SEMITIC LANGUAGES AND
LITERATURE	RABBINICAL LITERATURE
RHETORIC	ROMANCE LANGUAGES AND
GERMANIC LANGUAGES AND	LITERATURES
LITERATURES	SANSKRIT
GREEK LANGUAGE AND LIT-	PHILOSOPHY AND EDUCA-
ERATURE	TION
IRANIAN LANGUAGES	

Officers of the Faculty

NICHOLAS MURRAY BUTLER, Ph.D., *Dean and ex-officio member of the University Council*

EDWARD DELAVAN PERRY, Ph.D.....*Secretary*

HARRY THURSTON PECK, Ph.D...*Elected Delegate to the University Council*

The Faculty

SETH LOW, LL.D., *President*

HENRY DRISLER, LL.D., *Jay Professor of the Greek Language and Literature*

AUGUSTUS CHAPMAN MERRIAM, Ph.D., *Professor of Greek Archaeology and Epigraphy*

THOMAS RANDOLPH PRICE, M.A., LL.D., *Professor of the English Language and Literature*

HJALMAR HJORTH BOYESEN, Ph.D., *Professor of the Germanic Languages and Literatures*

*JOHN DUNCAN QUACKENBOS, A.M., M.D., *Professor of Rhetoric*

HARRY THURSTON PECK, Ph.D., *Professor of the Latin Language and Literature*

NICHOLAS MURRAY BUTLER, Ph.D., *Professor of Philosophy, Ethics, and Psychology, and Lecturer on the History and Institutes of Education*

WILLIAM HENRY CARPENTER, Ph.D., *Adjunct Professor of the Germanic Languages and Literatures*

JAMES MCKEEN CATTELL, Ph.D., *Professor of Experimental Psychology*

EDWARD DELAVAN PERRY, Ph.D., *Professor of Sanskrit*

* Absent on Leave.

*BERNARD FRANCIS O'CONNOR, Ph.D., *Adjunct Professor of the Romance Languages and Literatures*

ABRAHAM VALENTINE WILLIAMS JACKSON, L.H.D., Ph.D., *Adjunct Professor of the English Language and Literature*

ADOLPHE COHN, LL.B., A.M., *Professor of the Romance Languages and Literatures*

GEORGE EDWARD WOODBERRY, A.B., *Professor of Literature*

BRANDER MATTHEWS, A.M., LL.B., *Professor of Literature*

RICHARD JAMES HORATIO GOTTHEIL, Ph.D., *Professor of Rabbinical Literature and the Semitic Languages*

HENRY ALFRED TODD, Ph.D., *Professor of Romance Philology*

GEORGE RICE CARPENTER, A.B., *Professor of Rhetoric and English Composition*

NOTE: For details as to other officers of instruction, see departmental statements.

General Statement

The Faculty of Philosophy has charge of the university courses of instruction and research in philosophy, philology, and letters. Any duly matriculated university student is at liberty to combine courses of study and investigation under this faculty with courses offered by the University Faculties of Law, Medicine, Mines (Applied Science), Political Science, and Pure Science.

Students are received either as candidates for the degrees of Bachelor of Arts, Master of Arts, or Doctor of Philosophy, or to pursue special or partial courses. Some courses of lectures are open to the public, men and women alike, on payment of an auditor's fee. No auditor will be admitted to any course without the consent of the instructor, previously obtained. Auditors do not have and cannot receive any university recognition whatever.

Students enrolled either in the General, the Union, or the Jewish Theological Seminary, in the City of New York, who may be designated for the privilege by the authorities of those institutions, and accepted by the President of Columbia College, are admitted to the courses offered by the Faculty of Philosophy free of any charge for tuition.

Students enrolled in the Art Schools of the Metropolitan Museum of Art, who may be designated for the privilege by the authorities of those schools, and accepted by the President of Columbia College, are permitted to attend the courses of lectures on archæology and æsthetics free of any charge for tuition.

By the terms of an alliance between Columbia College and the Teachers College, at 9 University Place, duly qualified students of the Teachers College are permitted to enter the courses offered by the Faculty of Philosophy, either as candidates for degrees or as special students.

All of these institutions offer reciprocal privileges to students of Columbia College.

Admission and Attendance

Students desiring to pursue their studies under the direction of the Faculty of Philosophy as candidates for a degree, must have completed the curriculum of some college in good standing at least to the close of the Junior year. Cer-

* Absent on Leave.

tificates of graduation or dismissal from institutions of learning in foreign countries are also accepted.

Candidates for the degree of Bachelor of Arts are required to pursue courses of instruction amounting in all to not less than fifteen hours of attendance per week for one year, and must conform to such requirements regarding a graduation thesis as are established for members of the Senior class in the School of Arts. Their selection of studies is not confined to those in this Faculty. Students may pursue courses offered by the Faculty of Political Science or the Faculty of Pure Science, or the first-year course in the School of Law or the School of Medicine, and count the same as part of the requirement for the Bachelor's degree.

Candidates for the degrees of Master of Arts and Doctor of Philosophy must hold a Bachelor's degree from some college in good standing and remain in residence for not less than one and two years respectively. They are required to pursue courses of study or research in one major and two minor subjects, but are not held to any fixed number of hours of attendance per week.

Candidates for the degree of Doctor of Philosophy who have been in residence at other universities are given credit for the same.

Students who are not candidates for a degree are admitted to any courses which they are found competent to undertake.

There are no examinations for admission, either as candidates for a degree or as special students. Students are admitted at any time during the year, and may present themselves for examination for a degree whenever the requirements as to residence and an essay or dissertation have been complied with.

For fees see page 298.

COURSES OF STUDY AND RESEARCH

For the courses offered for 1893-94, see departmental statements as below. For more detailed account of the courses and for the tender of 1894-95, application should be made for circular of the School of Philosophy.

Philosophy and Education, page 91
 Experimental Psychology, page 93
 Greek, page 53 (COURSES I-VIIIa)
 Archæology and Epigraphy, page 54
 Latin, page 61 (COURSES I-XVI)
 English, page 46
 Literature, page 47
 Germanic Languages, page 51
 Romance Languages
 French, page 101
 Italian, page 103
 Spanish, page 104
 Sanskrit, page 82
 Semitic Languages, page 83
 Iranian Languages, page 87
 Study of Language, page 88
 Courses at the Union Theological Seminary
 New Testament Greek, page 55
 Semitic Languages, page 85

REGISTER OF STUDENTS

Following each student's name are printed, in italics, the subjects pursued by him under the Faculty of Philosophy; if the student is enrolled under another Faculty as well, the name of that Faculty is given in Roman type. The major subject, or the Faculty under which the major subject is taken, is in every case printed first.

NAME	RESIDENCE	CITY ADDRESS
Cornelius Stevenson Abbott, Jr.	<i>Belleville, N. J.</i>	
Columbia College, A.B., 1891. Student in General Theological Seminary. <i>Philosophy, Ethics; Political Science.</i>		
Albert James Adams, Jr.	<i>New York City</i>	361 West 32d st.
Harvard University, special student one year. <i>Philosophy.</i>		
William Rosenzweig Arnold	<i>New York City</i>	41 East 69th st.
Ohio Wesleyan University, A.B., 1892. Student in Union Theological Seminary. <i>Arabic and Hebrew, Assyrian and Syriac, Ethiopic and Semitic Epigraphy.</i>		
Henry Watterson Bainton	<i>New York City</i>	41 East 69th st.
Columbia College, A.B., 1893. Student in Union Theological Seminary. <i>Semitic Languages, New Testament Greek, Ecclesiastical History.</i>		
Annie Leland Barber	<i>Deerfield, Mass.</i>	715 Fifth ave.
Harvard University, A.B. cert., 1889; Columbia College, A.M., 1891. Student in Collegiate Course for Women. <i>Greek, Latin, Sanskrit.</i>		
Elizabeth Cynthia Barney	<i>New York City</i>	39 Broadway
Columbia College, A.B., 1891. Graduate student in Barnard College. <i>Philosophy, English, Romance Languages.</i>		
Alois Barta	<i>New York City</i>	41 East 69th st.
Kolin Gymnasium (Bohemia) <i>testimonium maturitatis</i> . Student in Union Theological Seminary. <i>Philosophy, English.</i>		
William Henry Bawden	<i>New York City</i>	115 West 78th st.
Columbia College, A.B., 1893. Student in Union Theological Seminary. <i>Semitic Languages, Greek, Ecclesiastical History.</i>		
Joseph Frederic Berg	<i>New Brunswick, N. J.</i>	
Rutgers College, A.B., 1892. <i>Hebrew and Arabic, Assyrian and Syriac, Ethiopic and Semitic Epigraphy.</i>		
Ludwig Bernstein	<i>New York City</i>	64 Rutgers slip
Gymnasium, Mitau (Russia), <i>testimonium maturitatis</i> , 1891. <i>Germanic Languages, Gothic, Anglo-Saxon.</i>		

NAME	RESIDENCE	CITY ADDRESS
Joshua Binion	<i>New York City</i> College of the City of New York, B.S., 1891. <i>Mines; Literature, Semitic Languages.</i>	5 Canal st.
Samuel Henry Bishop	<i>Orange, N. J.</i> University of Vermont, A.B., 1886. Student in Union Theological Seminary. <i>Psychology, Philosophy, Greek.</i>	41 East 69th st.
Francis Burke Brandt	<i>Philadelphia, Pa.</i> Harvard University, A.B., 1892. <i>Philosophy, Education, Logic.</i>	439 Lexington ave.
Roeliff Morton Breckenridge	<i>Hamilton, Ont.</i> Cornell University, Ph.B., 1892. <i>Latin.</i>	East 76th st. and E. R.
Ralph Lionel Brydges	<i>Islip, N. Y.</i> University of Toronto, three years. <i>Philosophy, Literature, English, German.</i>	
Henry Jagoe Burchell, Jr.	<i>New York City</i> Columbia College, A.B., 1892; A.M., 1893. University Fellow in Latin. <i>Latin, Greek, Greek Archæology and Epigraphy.</i>	38 East 53d st.
Starr Cadwallader	<i>Utica, N. Y.</i> Hamilton College, A.B., 1893. Student in Union Theological Seminary. <i>Philosophy, Ecclesiastical History, Greek.</i>	41 East 69th st.
John Francis Carew	<i>New York City</i> Columbia College, A.B., 1893. <i>Latin.</i>	225 East 58th st.
Marcus Hobson Carroll	<i>Livingston, S. I.</i> Bishop's College, Lenoxville (Canada), A.B., 1895. <i>Philosophy.</i>	
Olaf Zacharias Cervin	<i>Rock Island, Ill.</i> Augustana College, B.S., 1887. <i>Mines; German.</i>	262 West 115th st.
Thurston Walker Challen	<i>West Orange, N. J.</i> Rutgers College, B.S., 1887; M.S., 1890. Student in General Theological Seminary. <i>Philosophy, Ethics; Political Science.</i>	Chelsea square
Mabel Parker Clark	<i>New York City</i> Bryn Mawr College, A.B., 1889; A.M., 1890. Graduate student in Barnard College. <i>English, Romance Literature, Anglo-Saxon.</i>	126 West 85th st.
Robert Codman, Jr.	<i>Boston, Mass.</i> Harvard University, A.B., 1882; LL.B., 1885. Student in General Theological Seminary. <i>Philosophy.</i>	Chelsea square
Alfred Arthur Cook	<i>New York City</i> College of the City of New York, B.S., 1892. <i>Political Science; Literature.</i>	152 East 71st st.
Frederic Taber Cooper	<i>New York City</i> Harvard University, A.B., 1886; Columbia College, A.M., 1891. <i>Latin, Greek, Sanskrit.</i>	206 West 133d st.
James Walton Cooper	<i>Crete, Neb.</i> Doane College (Neb.), A.B., 1891. <i>Romance Philology, Romance Literature, German Literature.</i>	153 East 51st st.

NAME	RESIDENCE	CITY ADDRESS
Florence Haskell Corliss	<i>Englewood, N. Y.</i>	343 Madison ave.
Smith College, B.S., 1893. Graduate student in Barnard College. <i>Philosophy.</i>		
Thomas Coyle	<i>New York City</i>	41 East 69th st.
Amherst College, A.B., 1892. Student in Union Theological Seminary. <i>Philosophy.</i>		
Alexander Griswold Cummins, Jr.	<i>New York City</i>	Chelsea square
Swarthmore College, A.B., 1889. Student in General Theological Seminary. <i>Philosophy, Literature; Political Science.</i>		
James Gideon Ditmars	<i>Brooklyn, N. Y.</i>	(268 Rutledge st.)
Denison University, A.B., 1882. Student in Union Theological Seminary. <i>Philosophy, Ethics, Ecclesiastical History.</i>		
Allison Emery Drake	<i>New York City</i>	328 West 145th st.
St. Xavier College, Cincinnati, A.B., 1886; Columbia College, A.M., 1893. University Fellow in Anglo-Saxon. <i>Anglo-Saxon, Greek Archaeology, Latin.</i>		
Albert Frost Earnshaw	<i>Lowville, N. Y.</i>	41 East 69th st.
Princeton College, A.B., 1892. Student in Union Theological Seminary. <i>Philosophy.</i>		
Ruth Emerson	<i>New York City</i>	343 Madison ave.
Bryn Mawr College, A.B., 1893. Graduate student in Barnard College. <i>Philosophy.</i>		
Henry Crosby Emery	<i>Ellsworth, Me.</i>	East 76th st. and E. R.
Bowdoin College, A.B., 1892; Harvard University, A.M., 1893. <i>Philosophy.</i>		
George Hooper Ferris	<i>Milwaukee, Wis.</i>	41 East 69th st.
Brown University, A.B., 1891; A.M., 1893. Student in Union Theological Seminary. <i>Philosophy, Ecclesiastical History; Political Science.</i>		
Ernest von Fintel	<i>New York City</i>	105 East 90th st.
College of the City of New York, B.S., 1892. Mines; Political Science; <i>Literature.</i>		
Garrett Jacob Folmsbee	<i>New York City</i>	58 East 86th st.
Rutgers College, A.B., 1890; A.M., 1893. Student in Union Theological Seminary. <i>Philosophy.</i>		
Alexander Dyce Davidson Fraser	<i>Aberdeen, Scotland</i>	41 East 69th st.
Scotch Secondary Schools. Student in Union Theological Seminary. <i>English.</i>		
Charles Andrew Frasure	<i>Sherburn, N. Y.</i>	41 East 69th st.
Hamilton College, A.B., 1892. Student in Union Theological Seminary. <i>Philosophy, Greek, Ecclesiastical History.</i>		
John Haskell Freeman	<i>New York City</i>	41 East 69th st.
Beloit College, A.B., 1889. Student in Union Theological Seminary. <i>Philosophy, Greek, Ecclesiastical History.</i>		
William Henry Frost	<i>Beloit, Wis.</i>	Chelsea square
Beloit College, A.B., 1893. Student in General Theological Seminary. <i>Philosophy.</i>		
Charles Gartensteig	<i>New York City</i>	215 East 71st st.
College of the City of New York, B.S., 1891. Mines; <i>Literature, Semitic Languages.</i>		

NAME	RESIDENCE	CITY ADDRESS
Errett Gates	<i>Toledo, O.</i>	50 East 70th st.
Ohio Normal University, A.B., 1887. Student in Union Theological Seminary. <i>Philosophy, Greek, Ecclesiastical History.</i>		
Alexander Henry Geismar	<i>Brooklyn, N. Y.</i>	(358 Fourth st.)
University of Cincinnati, B.L., 1882. <i>Philosophy, Ethics, Psychology,</i>		
Andrew Gibson	<i>Cambridge, Mass.</i>	41 East 69th st.
High School, Belmont, Mass. Student in Union Theological Seminary. <i>Philosophy.</i>		
John Morris Gillette	<i>New York City</i>	41 East 69th st.
Park College (Mo.), A.B., 1892. Student in Union Theological Seminary. <i>Philosophy, Greek, Ecclesiastical History.</i>		
Lucia Graeme Grieve	<i>New York City</i>	157 East 49th st.
Wellesley College, A.B., 1883; A.M., 1893. Graduate student in Barnard College. <i>Greek, Sanskrit, Semitic Language.</i>		
Harold Griffing	<i>New York City</i>	729 Amsterdam ave.
Columbia College, A.B., 1890. <i>Philosophy, Psychology, Latin.</i>		
Christopher Robert Hamlin	<i>Lexington, Mass.</i>	Park ave. and 73d st.
Boston University, A.B., 1893. Political Science; <i>Education.</i>		
William James Hanna	<i>Davison, Mich.</i>	137 East 50th st.
University of Indiana, A.B., 1890; Stanford University, A.M., 1893. <i>Philosophy.</i>		
Willet Nicoll Hawkins, Jr.	<i>New Brighton, S. I.</i>	
Columbia College, A.B., 1893. Student in General Theological Seminary. <i>Philosophy.</i>		
Eugene May Heath	<i>Louisville, Ky.</i>	447 Lexington ave.
University School, Petersburg, Va. <i>English.</i>		
Oscar Clement Helming	<i>New York City</i>	50 East 70th st.
Butler College, Ph.B., 1888. Student in Union Theological Seminary. <i>Philosophy.</i>		
Joseph Herman Hertz	<i>New York City</i>	449 East 80th st.
College of the City of New York, A.B., 1891. <i>Ethics, Philosophy, Education.</i>		
William Addison Hervey	<i>New York City</i>	223 West 45th st.
Columbia College, A.B., 1893. <i>Scandinavian Languages, Gothic, Romance Philology.</i>		
Romilly Francis Humphries	<i>New York City</i>	15 East 129th st.
Trinity College, A.B., 1892. Student in Union Theological Seminary. <i>Philosophy, Greek, Ecclesiastical History.</i>		
Royce Knowlton Ingalls	<i>Joliet, Ill.</i>	64 East 49th st.
Cornell University, two years. <i>Literature.</i>		
Judah Joffe	<i>New York City</i>	166 Henry st.
Columbia College, A.B., 1893. <i>Classical Philology, Sanskrit, Iranian.</i>		

NAME	RESIDENCE	CITY ADDRESS
Abraham Johannan	<i>Urmi, Persia</i>	Chelsea square
Urmi College, A.B., 1870. Student in General Theological Seminary. <i>Semitic Languages, Iranian.</i>		
Byron Strathmore Johnson	<i>Norfolk, Va.</i>	41 East 69th st.
Lincoln University (Pa.), A.B., 1893. Student in Union Theological Seminary. <i>Philosophy.</i>		
John Edward Kerr, Jr.	<i>New York City</i>	41 Beaver st.
Private Schools. <i>Romance Languages.</i>		
Edgar Julius Kohler	<i>New York City</i>	115 East 71st st.
College of the City of New York, A.B., 1893. <i>Literature, German.</i>		
George Alexander Kohut	<i>New York City</i>	160 East 72d st.
College of the City of New York, one term. <i>Semitic Languages, Philosophy.</i>		
Alois Konkol	<i>New York City</i>	41 East 69th st.
Kolin Gymnasium (Bohemia), <i>testimonium maturitatis</i> . Student in Union Theological Seminary. <i>English, German.</i>		
Robert Julius Lau	<i>New York City</i>	312 West 36th st.
Union Seminary, New Berlin (Pa.), two years. <i>Semitic Languages.</i>		
Wilfrid Lay	<i>New Rochelle, N. Y.</i>	
Columbia College, A.B., 1893. University Fellow in Philosophy. <i>Philosophy, Psychology, Latin.</i>		
Caspar Levias	<i>New York City</i>	325 East 49th st.
Columbia College, A.B., 1893. University Fellow in Oriental Languages. <i>Hebrew and Syriac, Arabic and Ethiopic, Ethics.</i>		
John Alexander MacIntosh	<i>Halifax, N. S.</i>	41 East 69th st.
Dalhousie College, A.B., 1892. Student in Union Theological Seminary. <i>Philosophy.</i>		
James Alexander McLean	<i>Brooklyn, N. Y.</i>	(18 Cranberry st.)
University of Toronto, A.B., 1892; Columbia College, A.M., 1893. University Fellow in Comparative Jurisprudence. <i>Latin.</i>		
John Mattocks	<i>Chicago, Ill.</i>	68 West 37th st.
Western Theological Seminary, Chicago, four years. <i>Philosophy, Greek, English.</i>		
Arthur Mayer	<i>New York City</i>	241 West 131st st.
Sachs' Collegiate Institute, New York. <i>German.</i>		
Frederick Spear Mendenhall	<i>New York City</i>	150 Fifth ave.
Ohio Wesleyan University, A.B., 1889. Oxford University (Eng.), one year. <i>Greek, German, English.</i>		
Charles Vladimir Molnari	<i>Jayornik, Moravia</i>	41 East 69th st.
Bloomfield (N. J.) Theological Seminary, two years. Student in Union Theological Seminary. <i>Philosophy.</i>		

NAME	RESIDENCE	CITY ADDRESS
Lewis Freeman Mott College of the City of New York, B.S., 1883; M.S., 1886. <i>Romance Literature, Romance Philology, German.</i>	<i>New York City</i>	17 Lexington ave.
Samuel Paul Mueller Karl May Gymnasium (St. Petersburg), <i>testimonium maturitatis</i> , 1878; Universities of Dorpat and Berlin, five semesters. <i>Romance Philology, Romance Literature, German.</i>	<i>New York City</i>	56 West 98th st.
Henry Neckarsulmer College of the City of New York, B.S., 1891; Columbia College, A.M., 1893. <i>German.</i>	<i>New York City</i>	109 East 70th st.
Pezavia O'Connell Gammon Theological Seminary (Atlanta, Ga.), B.D., 1888. Student in Union Theological Seminary. <i>Philosophy, Semitic Languages.</i>	<i>Newark N. J.</i>	(145 Sheffield st.)
Toshiyuki Okamoto Meiji Gakuin, Tokio, <i>testimonium maturitatis</i> , 1891. Student in Union Theological Seminary. <i>Philosophy.</i>	<i>New York City</i>	41 East 69th st.
George N. Olcott Columbia College, A.B., 1893. <i>Latin, Greek, Greek Archaeology and Epigraphy.</i>	<i>Brooklyn, N. Y.</i>	(38 Grace court)
Richard Spencer Palmer Cornell University, two terms. <i>English.</i>	<i>Sing Sing, N. Y.</i>	
Hamilton Bancker Phelps Columbia College, A.B., 1893. Student in General Theological Seminary. <i>Philosophy.</i>	<i>Williamsbridge, N. Y.</i>	Chelsea square
Grace Pinney Bryn Mawr College, A.B., 1892. Graduate student in Barnard College. <i>German.</i>	<i>New York City</i>	202 West 82d st.
Charles Louis Pollard Columbia College, A.B., 1893. Pure Science; <i>Literature.</i>	<i>New York City</i>	104 East 20th st.
Lydia Van Housen Potter University of Michigan, A.B., 1880; Columbia College, A.M., 1890. Graduate student in Barnard College. <i>Greek, Philosophy, English.</i>	<i>Prattsburgh, N. Y.</i>	70 West 99th st.
James N. Powers University of Wisconsin, A.B. 1889; University of Göttingen, Ph.D., 1892. <i>Education.</i>	<i>Brooklyn, N. Y.</i>	(1111 Putnam ave.)
Sartell Prentice, Jr. Amherst College, A.B., 1891. Student in Union Theological Seminary. <i>Semitic Languages.</i>	<i>Chicago, Ill.</i>	41 East 69th st.
Mary Stuart Pullman Columbia College, A.B., 1893. Graduate student in Barnard College. <i>Greek Archaeology and Epigraphy.</i>	<i>New York City</i>	1032 Park ave.
William Rignemr Bloomfield (N. J.) Theological Seminary, two years. Student in Union Theological Seminary. <i>Philosophy.</i>	<i>New York City</i>	41 East 69th st.

NAME	RESIDENCE	CITY ADDRESS
Isaac Woodbridge Riley	<i>New York City</i>	50 East 70th st.
Yale University, A.B., 1892.	Student in Union Theological Seminary.	
<i>Philosophy.</i>		
James Dennison Rogers	<i>Boonville, N. Y.</i>	623 Lexington ave.
Hamilton College, A.B., 1889; Columbia College, A.M., 1893.		
University Fellow in Greek.		
<i>Greek, Latin, Greek Archaeology and Epigraphy.</i>		
Sandford Louis Rotter	<i>New York City</i>	347 West 45th st.
Columbia College, A.B., 1893.		
<i>Latin, Greek, Sanskrit.</i>		
Stuart Henry Rowe	<i>New Haven, Conn.</i>	111 West 47th st.
Yale University, A.B., 1890.	University Fellow in Pedagogy.	
<i>Education, Psychology.</i>		
Adelaide Rudolph	<i>New York City</i>	434 Madison ave.
Hiram College, A.B., 1879.	Graduate student in Barnard College.	
<i>English, Latin, Sanskrit.</i>		
Wilhelm Schiller	<i>New York City</i>	41 East 69th
Kolin Gymnasium (Bohemia), <i>testimonium maturitatis</i> .		
Student in Union Theological Seminary.		
<i>English, German.</i>		
Emma Goodeve Sebring	<i>Tarrytown, N. Y.</i>	9 University place
Smith College, A.B., 1889.	Graduate student in Barnard College.	
<i>Psychology, Philosophy, Education.</i>		
Arthur Beaman Simonds	<i>Berkeley, Cal.</i>	
Harvard University, A.B., 1891; University of California, A.M., 1893.		
University Fellow in Romance Languages.		
<i>Romance, Philology, Romance Literature, Literature.</i>		
Thomas William Smith	<i>New York City</i>	41 East 69th st.
Illinois College, A.B., 1887.	Student in Union Theological Seminary.	
<i>Philosophy.</i>		
Arthur Spalding	<i>New York City</i>	41 East 69th st.
Rutgers College, A.B., 1890.	Student in Union Theological Seminary.	
<i>Philosophy.</i>		
Henry Speaker	<i>New York City</i>	441 East 82d st.
Student in Jewish Theological Seminary.		
<i>Philosophy, English.</i>		
Abraham Richard Stern	<i>New York City</i>	55 West 50th st.
College of the City of New York, three years.		
<i>Philosophy.</i>		
Stephen Louis Testa	<i>New York City</i>	41 East 69th st.
Bloomfield (N. J.) Theological Seminary, five months.		
Student in Union Theological Seminary.		
<i>Philosophy.</i>		
Maurice Thorner	<i>New York City</i>	288 East Houston st.
College of the City of New York, A.B., 1892.		
<i>Semitic Languages.</i>		
Sidney Hubbell Treat	<i>New York City</i>	171 West 97th st.
Columbia College, A.B., 1893.		
<i>Literature, Philosophy, Greek.</i>		

NAME	RESIDENCE	CITY ADDRESS
Clarence Walton Vail Columbia College, A.B., 1892; A.M., 1893. <i>German, English, Literature.</i>	<i>Brooklyn, N. Y.</i>	(173 Congress st.)
Selden Lincoln Whitcomb Iowa College, A.B., 1887; Columbia College, A.M., 1893. University Fellow in Literature. <i>Literature, English, German.</i>	<i>Grinnell, Ia.</i>	308 West 51st st.
Stephen Seymour Wise Columbia College, A.B., 1892. <i>Semitic Languages.</i>	<i>New York City</i>	119 East 65th st.
Samuel Lee Wolff Harvard University, A.B., 1892. <i>Literature, German.</i>	<i>New York City</i>	125 East 73d st.
Jarvis Worden Boston University, one year <i>Philosophy.</i>	<i>New York City</i>	466 West 23d st.
Total.....		108

MEMBERS OF THE SENIOR CLASS IN THE SCHOOL OF ARTS, PURSUING COURSES OF INSTRUCTION FOR THE DEGREE OF A.B. IN THE DEPARTMENTS SPECIFIED.

NAME	RESIDENCE	CITY ADDRESS
David D. Ackerman <i>English.</i>	<i>Paterson, N. J.</i>	(274 Hamilton ave.)
Paul Armitage <i>English.</i>	<i>Bay Shore, L. I.</i>	65 Church st.
Lawrence Atterbury <i>English, Literature, German.</i>	<i>New York City</i>	141 West 86th st.
John Philip Benkard <i>Philosophy, English, Literature, Iranian.</i>	<i>New York City</i>	127 East 24th st.
James Fuller Berry <i>Philosophy, English.</i>	<i>New York City</i>	239 West 44th st.
Charles Joseph Breck, Jr. <i>Philosophy.</i>	<i>New York City</i>	343 West 56th st.
George Henry Broughton, Jr. <i>Latin, English, Literature, German, Romance Languages.</i>	<i>New York City</i>	The Hanover, 15th st. and Fifth ave.
Francis Tillon Buck <i>Philosophy, Greek, English, Literature.</i>	<i>New York City</i>	158 West 48th st.
Russell Ely Burke <i>Romance Languages.</i>	<i>Netherwood, N. J.</i>	17 East 55th st.
Spencer Carleton <i>German.</i>	<i>New York City</i>	53 West 45th st.
George Stanislaus Connell <i>English.</i>	<i>New York City</i>	154 West 87th st.

NAME	RESIDENCE	CITY ADDRESS
Harold Coburn Cook <i>English.</i>	<i>Flushing, N. Y.</i>	
Walter Wheeler Cook <i>German.</i>	<i>Flushing, N. Y.</i>	
Eugene Howell Daly <i>Latin.</i>	<i>New York City</i>	2050 Madison ave.
Alexander White Doolittle <i>Literature</i>	<i>Waterville, N. Y.</i>	258 West 55th st.
William Coffin Dornin, Jr. <i>Philosophy, Greek, English, Romance Languages.</i>	<i>New York City</i>	52 West 55th st.
Frederick Clifford Earl <i>Latin, English, Romance Languages.</i>	<i>Bayonne, N. J.</i>	(833 Avenue C)
Harold Sharpe Emerson <i>Latin.</i>	<i>Brooklyn, N. Y.</i>	(125 Gates ave.)
Shepherd Ivory Franz <i>Philosophy, Greek, Latin, English.</i>	<i>Jersey City, N. J.</i>	(62 Cottage st.)
James Cox Howell <i>English.</i>	<i>Highland Mills, N. Y.</i>	
Ernest Valentine Hubbard <i>English, Literature.</i>	<i>New York City</i>	133 West 74th st.
Francis Edward Hyslop <i>Philosophy, Greek, Latin, English, Literature.</i>	<i>Delphi, Ind.</i>	171 West 81st st.
David Stewart Iglehart <i>Literature.</i>	<i>New York City</i>	106 East 86th st.
Meir Jaffa <i>Greek, Latin, Sanskrit, Semitic Languages.</i>	<i>New York City</i>	240 East 82d st.
Herbert McLeod Johnston <i>Philosophy, Greek, English, Literature, German.</i>	<i>Plainfield, N. J.</i>	402 East 5th st.
Shepherd Knapp, Jr. <i>Philosophy, Greek, English, Literature, German.</i>	<i>New York City</i>	266 Lexington ave.
Horatio Sheafe Krans <i>Philosophy, English, Literature, Romance Languages.</i>	<i>New York City</i>	71 Irving place
Walter Henry Liebmann <i>Philosophy, German.</i>	<i>New York City</i>	32 East 72d st.
Campbell Erie Locke <i>English.</i>	<i>New York City</i>	23 West 53d st.
Russell Hillard Loines <i>Philosophy, English, Literature.</i>	<i>Brooklyn, N. Y.</i>	(26 Garden place)
Frederick Ludlow Luqueer <i>Philosophy, Greek, Latin, German.</i>	<i>Brooklyn, N. Y.</i>	(907A Lafayette ave.)
William Jeremiah Millard <i>Philosophy, English, Literature.</i>	<i>New York City</i>	133 West 4th st.
George Mitchell Parker <i>Philosophy.</i>	<i>Elyria, O.</i>	437 West 59th st.
Warren Waverley Phelan <i>Philosophy, English, Literature.</i>	<i>Brooklyn, N. Y.</i>	(108 South 5th st.)

NAME	RESIDENCE	CITY ADDRESS
Albert Capron Phillips <i>Philosophy, Literature.</i>	<i>New York City</i>	205 Boulevard
Theodore Irving Reese <i>Philosophy, Greek, English, German, Semitic Languages.</i>	<i>Dobbs Ferry, N. Y.</i>	29 East 28th st.
Winfred Chesney Rhoades <i>Philosophy, English, Literature, Romance Languages.</i>	<i>Mt. Vernon, N. Y.</i>	(141 S. Second ave.)
Harry Pelham Robbins <i>Philosophy, English, Literature.</i>	<i>New York City</i>	419 Fifth ave.
Milton Stanley Roth <i>Philosophy, English, Literature, German.</i>	<i>New York City</i>	65 East 61st st.
Edward Sandford <i>Philosophy.</i>	<i>Yonkers, N. Y.</i>	
George Reese Satterlee <i>Philosophy, English, Literature.</i>	<i>New York City</i>	60 East 78th st.
Harry Judson Shaw <i>Philosophy, English, Literature.</i>	<i>Rockland, Me.</i>	175 East 71st st.
William West Shaw <i>Philosophy, English.</i>	<i>New York City</i>	19 West 53d st.
John Dempster Sherman, Jr. <i>English, Literature, Romance Languages.</i>	<i>Peekskill, N. Y.</i>	
Henry Merwin Shrady <i>German.</i>	<i>New York City</i>	8 East 66th st.
Frederick Herbert Sill <i>Philosophy, Greek, English, Literature.</i>	<i>New York City</i>	243 West 45th st.
Clarence Bishop Smith <i>Philosophy, Literature, German.</i>	<i>New York City</i>	101 East 69th st.
Charles Robert Swords <i>Philosophy, Greek, English, Literature.</i>	<i>New Hamburg, N. Y.</i>	29 East 27th st.
Henry Ayres Uterhart <i>English, Literature, Latin.</i>	<i>New York City</i>	552 East 85th st.
Edwin Dunning Weed <i>Philosophy Greek, Latin, English, Semitic Languages.</i>	<i>Flushing, N. Y.</i>	
Frederic De Witt Wells <i>English.</i>	<i>New York City</i>	Hotel Waldorf
Arthur Donald Williams <i>Greek, English, German.</i>	<i>New York City</i>	15 West 122d st.
Louis William Wormser <i>Literature, German.</i>	<i>New York City</i>	836 Fifth ave.
Frederick Amaziah Wright <i>Greek, English, Semitic Languages.</i>	<i>New York City</i>	110 West 76th st.
Edwin Garvin Zabriskie <i>English.</i>	<i>Flatbush, N. Y.</i>	

Total. 55

GRAND TOTAL ENROLLED UNDER THE UNIVERSITY FACULTY OF PHIL-
OSOPHY. 163

SUMMARY OF GRADUATE STUDENTS

Columbia College.....	28	University of Göttingen.....	1
College of the City of New York..	10	Hiram College.....	1
Harvard University.....	6	Illinois College.....	1
Rutgers College.....	4	University of Indiana.....	1
Bohemian Gymnasia.....	3	Iowa College.....	1
Bryn Mawr College.....	3	Lincoln University.....	1
Hamilton College.....	3	Meiji Gakuin (Tokio, Japan)....	1
Amherst College.....	2	University of Michigan.....	1
Beloit College.....	2	College of New Jersey (Princeton)	1
Ohio Wesleyan University... ..	2	Ohio Normal University.....	1
Russian Gymnasia.....	2	Park College (Mo.).....	1
Smith College.....	2	St. Xavier College (Cincinnati, O.)	1
Yale University.....	2	Leland Stanford, Jr., University..	1
Augustana College.....	1	Swarthmore College.....	1
Bishop's College (Canada).....	1	University of Toronto.....	1
Boston University.....	1	Trinity College.....	1
Bowdoin College.....	1	University of Vermont.....	1
Brown University.....	1	Urmi College (Persia).....	1
Butler College.....	1	Wellesley College.....	1
University of California.....	1	University of Wisconsin.....	1
University of Cincinnati.....	1		
Cornell University.....	1	45 Institutions	
Dalhousie College (A.S.).....	1	Total	102
Denison University.....	1	Deduct for duplication.....	12
Doane College.....	1		
Gammon Theological Seminary..	1	Total	90

DEGREES HELD BY GRADUATE STUDENTS

Bachelor of Arts.....	72	Deduct for students holding more than one degree	22
Bachelor of Philosophy.....	2		
Bachelor of Science.....	9		90
Bachelor of Divinity.....	1	Students without degrees, other than Seniors in the School of	
Bachelor of Laws.....	1	Arts	18
Bachelor of Letters.....	1	Seniors in the School of Arts..	55
Testimonium Maturitatis.....	6		
Master of Arts.....	17		
Master of Science.....	2		
Doctor of Philosophy.....	1		163
	112		

SCHOOL OF PURE SCIENCE

The following departments are represented in the Faculty :

ANATOMY	MATHEMATICS
ASTRONOMY	MECHANICS
BIOLOGY	MINERALOGY AND
BOTANY	METALLURGY
CHEMISTRY	PATHOLOGY
GEOLOGY	PHYSICS
PHYSIOLOGY	

Officers of the Faculty

HENRY F. OSBORN, Sc.D. *Dean and Ex-Officio Member of the University Council*

NATHANIEL L. BRITTON, E.M., Ph.D. *Secretary*

JOHN K. REES, A.M., E.M. *Elected Delegate to the University Council*

The Faculty

SETH LOW, LL.D., *President*

THOMAS EGGLESTON, E.M., Ph.D., LL.D., *Professor of Mineralogy and Metallurgy*

CHARLES F. CHANDLER, Ph.D., M.D., LL.D., *Professor of Chemistry*

J. HOWARD VAN AMRINGE, Ph.D., L.H.D., *Professor of Mathematics*

OGDEN N. ROOD, A.M., *Professor of Physics*

JOHN K. REES, A.M., E.M., *Professor of Astronomy, and Director of the Observatory*

JOHN G. CURTIS, A.M., M.D., *Professor of Physiology*

NATHANIEL L. BRITTON, E.M., Ph.D., *Professor of Botany*

GEORGE S. HUNTINGTON, M.D., *Professor of Anatomy*

JAMES F. KEMP, A.B., E.M., *Professor of Geology*

MICHAEL I. PUPIN, Ph.D., *Adjunct Professor of Mechanics*

HENRY FAIRFIELD OSBORN, Sc.D., *Da Costa Professor of Biology*

EDMUND B. WILSON, Ph.D., *Adjunct Professor of Biology*

WM. HALLOCK, A.B., Ph.D., *Adjunct Professor of Physics*

ALFRED J. MOSES, E.M., Ph.D., *Adjunct Professor of Mineralogy*

ROBERT S. WOODWARD, C.E., Ph.D., *Professor of Mechanics*

T. MITCHELL PRUDDEN, M.D., *Professor of Pathology*

NOTE : For details as to other officers of instruction, see departmental statements.

General Statement

This Faculty has in charge the supervision of all candidates for the degrees of A.M. or Ph.D., in any of the branches of Pure Science taught in the University. Students taking their major subject in Pure Science will be regarded as under the especial supervision of this Faculty. Students taking one minor subject, or both, and special students, must also register with the Dean.

Candidates for the degrees of A.M. or Ph.D. are subject :

1st. To the general regulations of the University Council.

2d. To the special regulations of this Faculty.

The standard of preparation for admission to major and minor courses is indicated by the courses marked "collegiate" under each department. These, or their equivalents, will be required by examination or otherwise, according to the previous collegiate record of the candidate.

Students of this and other colleges whose requirements conform to the regulations of the School of Arts may be admitted to the Senior courses under this Faculty as candidates for the degree of A.B. They must present testimonials from some other institution maintaining an equivalent course of study, to the close of the Junior year, or must pass a satisfactory examination upon the studies of the first three years of the School of Arts. Candidates for this degree are required to pursue courses of instruction amounting in all to not less than fifteen hours of attendance per week for one year, and must conform to such requirements regarding a thesis as are established for members of the Senior class in the School of Arts. Their selection of studies is not confined to those in this Faculty.

Examination

Applications to be examined for the degree of Master of Arts or Doctor of Philosophy must be made on or before April 1st of the academic year in which the examination is desired. The examination shall be oral, at least in part, and in the case of candidates for the degree of Doctor of Philosophy the dissertation must be publicly defended in the presence of the Faculty or of so many of the members as may desire to attend. The instructors in charge of the major and minor subjects must be present and conduct the examination.

RECORD.—At the close of each course the instructor in charge shall enter in the registration book the record of the student, and at the close of each academic year each student shall exhibit his registration book to the Dean or Secretary for record.

TIME.—At least one year's study is required for the degree of Master of Arts, and at least two years' study for the degree of Doctor of Philosophy.

Special Students

Students who are not candidates for a degree shall be permitted to pursue such courses from among those offered by this Faculty as they may be found qualified to enter upon and as the Dean may approve.

Qualifications of such students shall be passed upon by the instructors in

charge of the courses selected by them. The standard will conform in general to that required of candidates for degrees.

All applications to pursue courses of study either wholly or in part under the direction of this Faculty shall be made in writing to the Dean, on blank forms prepared for the purpose.

COURSES OF STUDY

For the courses offered for 1893-94 see departmental statements, as below.

For more detailed account of the courses and for the tender of 1894-95 application should be made for circular of the School of Pure Science.

Mathematics, page 67 (COURSES IX-XXIV)

Mechanics, page 70

Astronomy, page 19

Physics, page 96

Chemistry, page 25 (COURSES I-XII, XVII-XX, XXIV-XXVIII, XXXI-XXXIII, and XXXVI-XXXVIII)

Mineralogy, page 72

Geology, page 49

Biology, page 20

Botany, page 23

Physiology, page 98

Anatomy, page 14 (COURSES I, II, VI, and VII)

Bacteriology, page 90 (COURSES II and III)

REGISTER OF STUDENTS

Following each student's name are printed, in italics, the subjects pursued by him under the Faculty of Pure Science; if the student is enrolled under another Faculty as well, the name of that Faculty is given in roman type.

The major subject, or the Faculty under which the major subject is taken, is in every case printed first.

NAME	RESIDENCE	CITY ADDRESS
Gary Nathan Calkins	<i>New York City</i> Massachusetts Institute of Technology, B.S. 1889. <i>Biology, Geology, Physiology.</i>	108 West 61st st.
Herman S. Davis	<i>New York City</i> College of New Jersey, A.B., 1892 <i>Astronomy, Mathematics.</i>	Columbia College
Harrison G. Dyar	<i>New York City</i> Massachusetts Institute of Technology, B.S., 1889. <i>Bacteriology, Biology, Botany.</i>	76 West 69th st.
Philip G. Gossler	<i>New York City</i> Pennsylvania State College, B.S., 1893. <i>Mines; Mechanics.</i>	Vanderbilt Building
A. Arthur Heller	<i>Lancaster, Penn.</i> Franklin and Marshall College, A.B., 1892. <i>Botany, Mineralogy, Geology.</i>	
Emily Louise Eaton Hepburn		Student of Barnard College
	St. Lawrence University, B.S., 1890. <i>Botany, Biology, Chemistry.</i>	
Adolph A. Himowich	<i>New York City</i> University of the City of New York, B.S, M.S., M.D. <i>Mechanics, Physics, Mathematics.</i>	136 Henry st.
Jean Kirk Howell		Student of Barnard College
	Cornell University, Ph.B., 1889; M.S., 1890. <i>Botany, Biology, Chemistry.</i>	
Harwood Huntington	<i>New York City</i> Trinity College, A.B., 1884. <i>Chemistry, Law.</i>	76th st. and East River
George H. Ling	<i>New York City</i> University of Toronto, A.B., 1893. <i>Mathematics, Mechanics.</i>	595 Lexington ave.
Parker Cairns McIlhiney	<i>Jersey City, N. J.</i> Columbia College, Ph.B.. 1892; A.M. 1893. <i>Chemistry, Physics, Mines.</i>	(619 Grand st.)

NAME	RESIDENCE	CITY ADDRESS
Charles Riborg Mann Columbia College, A.B., 1891. (Tyndall Fellow.) <i>Physics, Mathematics, Astronomy.</i>	Orange, N. Y.	
William D. Matthew University of New Brunswick, A.B. 1889; Columbia College, Ph.B., 1893. <i>Geology, Mineralogy, Biology.</i>	St. John, N. B.	336 West 35th st.
Albert Prescott Mathews Massachusetts Institute of Technology, B.S., 1891. <i>Biology, Bacteriology, Physiology.</i>	New York City	163 West 63d st.
John A. Mathews Washington and Jefferson College, B.S., 1893. <i>Chemistry, Mineralogy, Geology.</i>	Washington, Penn.	251 West 54th st.
Edmund Howd Miller Columbia College, Ph.B., 1891; A.M., 1892. <i>Chemistry; Mines.</i>	New York City	118 West 11th st.
Robert Andrews Millikan Oberlin College, A.B., 1891; A.M. 1892. <i>Physics, Mathematics, Chemistry.</i>	Oberlin, Ohio	601 Lexington ave.
Charles Howard Parmly College of the City of New York, B.S., 1887; Columbia College, E.E., 1893. <i>Mechanics, Mathematics; Mines.</i>	New York City	344 West 29th st.
Thomas Norwood Penrose Yale University, A.B., 1891; Columbia College, LL.B., 1893. <i>Mines; Physics.</i>	New York City	147 West 61st st.
Anna Stockton Pettit St. Lawrence University, B.S., 1888. <i>Botany, Chemistry, Biology.</i>		Student of Barnard College
Charles Louis Pollard Columbia College, A.B., 1893. <i>Botany, Geology; Philosophy.</i>	New York City	104 East 20th st.
Heinrich Ries Columbia College, Ph.B., 1892. <i>Mineralogy, Geology, Chemistry.</i>	New York City	28 West 128th st.
E. Podryabinick Robinson University of the City of New York, B.S., 1893. <i>Chemistry; Mines.</i>	New York City	314 Henry st.
John Kunkel Small Franklin and Marshall College, A.B., 1892. <i>Botany, Biology, Geology.</i>	Lancaster, Penn.	496 Lexington ave.
Effie Almire Southworth University of Michigan, B.S., 1885. <i>Botany, Biology, Chemistry.</i>		Student of Barnard College
Francis Ferdinand Spies Columbia College, A.B., 1892. <i>Physics, Chemistry; Mines.</i>	New York City	64 East 55th st.
Harry Asahel Storrs University of Vermont, C.E., 1882. <i>Mechanics, Physics; Mines.</i>	Burlington, Vt.	111 East 24th st.

NAME	RESIDENCE	CITY ADDRESS
Oliver S. Strong	<i>Montclair, N. J.</i> College of New Jersey, A.B., 1891 ; Columbia College, A.M., 1892. <i>Biology, Botany, Chemistry.</i>	
Charles Sampson Williams	<i>Portland, Me.</i> Maine State College, M.S. 1893. <i>Chemistry, Physics ; Philosophy.</i>	150 East 28th st.

SENIORS FROM THE SCHOOL OF ARTS

J. P. Benkard	<i>New York City</i> <i>Chemistry, Physics.</i>	127 East 24th st.
James F. Berry	<i>New York City</i> <i>Mathematics, Physics.</i>	239 West 44th st.
Francis H. Bowman	<i>New York City</i> <i>Mathematics, Physics, Chemistry</i>	148 East 27th st.
C. J. Breck, Jr.	<i>New York City</i> <i>Physics, Chemistry, Botany.</i>	343 West 56th st.
G. H. Broughton, Jr.	<i>New York City</i> <i>Physics.</i>	15th st. and Fifth ave.
Spencer Carleton	<i>New York City</i> <i>Mathematics, Physics, Chemistry.</i>	53 West 45th st.
W. W. Cook	<i>Flushing, N. Y.</i> <i>Mathematics, Physics, Chemistry.</i>	
Eugene H. Daly	<i>New York City</i> <i>Mineralogy.</i>	2050 Madison ave.
William C. Dornin, Jr.	<i>New York City</i> <i>Physics.</i>	52 West 55th st.
Horace Dowie	<i>Brooklyn N. Y.</i> <i>Mathematics, Physics, Chemistry.</i>	(363 Jefferson ave.)
F. C. Earl	<i>Bayonne, N. J.</i> <i>Botany.</i>	(833 Avenue C)
Ernest V. Hubbard	<i>New York City</i> <i>Astronomy, Physics, Geology, Biology, Botany.</i>	138 West 74th st.
G. W. Kosmak	<i>New York City</i> <i>Geology, Biology, Botany.</i>	23 East 93d st.
M. Jaffa	<i>New York City</i> <i>Botany.</i>	240 East 82d st.
William G. Millard	<i>New York City</i> <i>Physics, Chemistry.</i>	133 West 4th st.
A. O. Miller	<i>Passaic, N. J.</i> <i>Geology.</i>	
Theodore I. Reese	<i>New York City</i> <i>Physics.</i>	29 East 28th st.
Winfred C. Rhoades	<i>Mount Vernon, N. Y.</i> <i>Physics.</i>	(141 S. Second ave.)
H. P. Robbins	<i>New York City</i> <i>Astronomy, Chemistry, Botany.</i>	419 Fifth ave.

Milton S. Roth	<i>New York City</i>	65 East 61st st.
<i>Physics.</i>		
George Reese Satterlee	<i>New York City</i>	60 East 78th st.
<i>Physics.</i>		
Harry G. Shaw	<i>New York City</i>	168 East 72d st.
<i>Physics.</i>		
W. W. Shaw	<i>New York City</i>	19 West 53d st.
<i>Physics, Chemistry, Botany.</i>		
Frederick H. Sill	<i>New York City</i>	243 West 45th st.
<i>Botany.</i>		
Charles R. Swords	<i>New York City</i>	29 East 28th st.
<i>Physics.</i>		
Guy H. Turrell	<i>New York City</i>	1731 Washington ave.
<i>Botany.</i>		
E. D. Weed	<i>Flushing, N. Y.</i>	
<i>Botany.</i>		
A. D. Williams	<i>New York City</i>	15 West 122d st.
<i>Physics.</i>		
Edwin G. Zabriskie	<i>Flatbush, N. Y.</i>	
<i>Physics, Biology, Botany.</i>		

SPECIAL STUDENTS

Abram E. Anderson	<i>Elizabeth, N. J.</i>	(643 Jefferson ave.)
<i>Botany, Biology.</i>		
Charles S. Brownell	<i>Nyack-on-Hudson, N. Y.</i>	
<i>Botany.</i>		
Aron W. Chapman	<i>Brooklyn, N. Y.</i>	(160 Hicks st.)
<i>Mechanics; studying also under Faculty of Mines.</i>		
Alexander Livingston Kean	<i>Elizabeth, N. J.</i>	
<i>Biology.</i>		
T. H. Kearney, Jr.	<i>Knoxville, Tenn.</i>	
<i>Botany, Geology.</i>		
Leffert Lefferts, A.B.	<i>Flatbush, N. Y.</i>	
<i>Chemistry.</i>		
Max Osterberg	<i>New York City</i>	232 East 62d st.
<i>Mechanics, Mathematics; studying also under Faculty of Mines.</i>		
Charles T. Rittenhouse, M. E.	<i>New York City</i>	247 West 138th st.
<i>Mechanics; studying also under Faculty of Mines.</i>		
David Everett Wheeler	<i>New York City</i>	71st st. and Park ave.
<i>Mathematics, Physics, Chemistry, Biology, Botany.</i>		

SUMMARY

Graduates.....	29
Seniors from the School of Arts.....	29
Special Students.....	9
Total	67

THE LIBRARY

The library occupies the entire library building with the exception of the rooms devoted to the law school and the herbarium. It is open daily from 8.30 A.M. until 11 P.M. during term time, and until 10 P.M. in vacations. All officers, students, and graduates of all departments of the University have free access to the library and may draw books for home use. Undergraduates and *alumni* may draw books not exceeding three volumes in number for a period not exceeding two weeks, but may, if necessary, renew their loans.

Persons not connected with the college, who have occasion to use a library for purposes of study, and who are introduced to the librarian as responsible, are welcome to use the library in the building.

The reading-rooms contain table space for two hundred and fifty readers, and are lighted by electric light. The west end of the main reading-room is devoted to the law students, and is surrounded by an ample collection of standard text-books, digests, statutes, and reports.

A large body of dictionaries, cyclopædias, and other reference books are placed in the general reading-room for common use. Students are allowed free access to a considerable part of the books in the library.

The library is carefully and accurately catalogued, both by authors and subjects. The catalogue is on cards accessible to the public. Competent reference librarians are on duty at all hours during which the library is open to render any needed assistance to readers.

The library contains about 170,000 volumes, exclusive of pamphlets and duplicates. Besides these, the library of the New York Academy of Sciences, consisting of about 8000 volumes, made up largely of the transactions of learned societies, is deposited here and accessible to all readers.

The additions to the library for the past four years have averaged about 17,000 volumes annually. The library is well represented in all the subjects taught in the various courses of the University.

It is the object of the library to furnish for students and investigators standard works in all sciences, and also, as far as may be needed, the material for original research.

The library contains a number of interesting and notable special collections. Among these may be mentioned the Phoenix library, the gift of Stephen Whitney Phoenix of the class of 1859, consisting of 7000 volumes; the Avery Architectural library, with 11,000 volumes devoted to architecture and the building and industrial arts; the Mary Queen of Scots library, collected and given by General J. Watts de Peyster, containing 300 volumes; and the collection of books by and about Goethe, containing 800 volumes.

METHOD OF ENTERING THE COLLEGE

Candidates for a degree, after filling in the blank provided for the purpose, should present the same to the Treasurer, with the proper fee. Students intending to pursue a partial course must have the amount of the tuition fee certified by the Dean of the proper Faculty, before the fee will be received.

Students entering the University for the first time are required to pay a matriculation fee of \$5, and to matriculate in the President's office by writing their names in the matriculation book. Such students must personally present, as evidence of their right to matriculate, the Treasurer's receipt for all required fees upon the form provided.

Every student holding a scholarship, or receiving the benefit of free or reduced tuition, is required to file with the President's Secretary a certificate to that effect, from the Dean of the Faculty with which he is registered.

Students who have matriculated in a previous year may place the Treasurer's receipt in the envelope provided for the purpose, addressed to the President's Secretary, and deposit the same in the President's letter-box. The matriculation card will then be sent to the student by mail as promptly as possible.

Immediately after matriculating, every student must present his card for registration to the Dean, or Deans, of the Faculty, or Faculties, under which he proposes to study.

Nostudent is permitted to attend any academic exercise until he has complied with the regulations in regard to matriculation and registration.

Students entering the Medical School may pay their fees and register at the College of Physicians and Surgeons, 437 West 59th Street.

All communications for the President must be addressed to him at the College.

For circulars and detailed information, address the Secretary of the President, or the Registrar of the school concerned, Columbia College, except the Registrar of the College of Physicians and Surgeons, whose address is 437 West 59th Street.

FEES

The Statute in regard to fees is as follows :

§ 1. The following fees are established :

Matriculation Fees.	<i>For Matriculation</i>	\$ 5
	<i>For Tuition :</i>	
Tuition Fees.	For candidates for a degree,	
	In the School of Arts per annum	150
	In the School of Law "	150
	In the College of Physicians and Surgeons "	200
	In the School of Mines "	200

In the School of Political Science	per annum	150	
In the School of Philosophy	"	150	
In the School of Pure Science	"	200	
For candidates for the degree of Master of Arts and Doctor of Philosophy	"	150	
The maximum fee for the degrees of A.M. and Ph.D. shall be respectively \$150 and \$300.			
For students pursuing partial courses,			
at the rate of \$15 per annum for each hour of attendance per week on lectures or recitations, with a maximum fee of		150	
For auditors,			
at the rate of \$20 per annum for each hour of attendance per week on lectures or recitations, with a maximum fee of		200	Examination Fees.
<i>For Examinations :</i>			
For examinations at unusual times		5	
For the Bachelor's degree (not professional or technical)		15	
For any professional or technical degree		25	
For the degree of Master of Arts		25	
For the degree of Doctor of Philosophy		35	Special Fees (Medicine).
<i>Special Fees :</i>			
In the College of Physicians and Surgeons,			
Dissecting material, per "part"		1	
<i>For students who are not candidates for a degree :</i>			
At the rate for each course of didactic lectures in Anatomy ; Physiology ; Physics and Chemistry ; Materia Medica, Therapeutics and Hygiene ; Obstetrics and the Diseases of Women ; Surgery ; the Practice of Medicine, including the diseases of the Mind and Nervous System		20	
Dissection		10	
Practical Chemistry, including chemicals and breakage, per course		25	
Laboratory course in Normal Histology, including materials		25	
Laboratory course in Pathology and Pathological History, including materials		25	
Laboratory fee for special instruction in Pathology or Histology or Bacteriology, per month		25	
Operative surgery on the cadaver, including material, per course		20	
For other special courses the fees must be specially arranged for with the instructors.			
The clinical lectures at the Vanderbilt Clinic are free to matriculates who do not take the regular curriculum.			
The public clinical lectures, and demonstrations of Pathological Anatomy, which are given at the hospitals by officers of the College, are free to all matriculates.			
In the School of Mines,			
<i>For graduate students :</i>			
For the use of the cabinets only		25	Special Fees (Mines).
For the use of the drawing academy only		25	
For the use of the laboratories or either of them		50	

For candidates for admission to advanced standing who attend the

Payment of Summer School in Surveying 35
Fees.

§ 2. The matriculation fee shall be paid before the entrance examination. Examination fees shall be paid in all cases before examination.

§ 3. Annual tuition fees may be paid in equal installments at the beginning of each session of the academic year, except that in the case of students in the College of Physicians and Surgeons such fees shall be paid in full at the beginning of the academic year, and except that whenever the total amount of a student's tuition fees shall not exceed one hundred dollars, the full amount shall be paid at the beginning of the academic year or at entrance.

Prepayment of Dues. § 4. No candidate for a degree in any School shall be entitled to receive the same until he shall have discharged all his dues to the College.

Free and Reduced Tuition

§ 5. Free or reduced tuition may be granted by any Faculty, except the Faculty of Medicine, in special cases on the ground of character, ability, and need combined, but no reduced fee shall be less than fifty per cent. of the statutory charge, and the total number of students receiving free or reduced tuition under any Faculty shall not exceed ten per cent. of the total number of students registered with such Faculty. No free or reduced tuition shall be granted to any student during the first year of his connection with the College, except in the case of students matriculating for the first time in the year 1892.

Fellows. § 6. Fellows shall be exempt from the payment of all fees.

Free Students. § 7. Free students and students granted a reduction of tuition fees shall not be exempt from the payment of fees for matriculation, for extra examination, and for examination for a degree.

Comparative Statement of Students' Expenses for the Academic Year, October to June.

BASED ON STUDENTS' STATEMENTS.

	Low.	Average.	Liberal
Matriculation Fee (First Year)	5	5	5
Tuition	150	150	150
Books	15	30	40 up
College Incidentals	—	15	50 "
Room (32 weeks)	80	128	224 "
Board (32 weeks)	80	128	256 "
Clothes and Washing	35	75	125 "
All other Expenses	15	25	50 "
Total	380	556	900 up

In the case of students in the schools of Medicine, Mines, and Pure Science, \$50.00 for tuition should be added, the fee in those schools being \$200.

FELLOWSHIPS, SCHOLARSHIPS, AND OTHER PROVISION FOR THE ASSISTANCE OF STUDENTS

From and after July 1, 1892, there shall be eighteen Fellowships; and from and after July 1, 1893, twenty-four Fellowships to be known as "University Fellowships," each of the value of five hundred dollars a year. Such Fellowships shall be awarded by the Council, to those applicants who give evidence of special fitness to pursue courses of higher study and original investigation, the competition to be open to graduates of all colleges and scientific schools. Vacancies occurring in any of such Fellowships shall be filled in the same manner in which original appointments are made.

**University
Fellowships.**

The application shall be made prior to March 1st, in writing, addressed to the President of Columbia College. Applications received later than March 1st may fail of consideration. The term of the Fellowship is one year, dating from July 1st. Residence should begin October 1st.

**University
Fellowship
Regulations.**

The candidate must give evidence

(a) of a liberal education, such as a diploma already granted, or about to be received, from a college or scientific school of good repute;

(b) of decided fitness for a special line of study, such as an example of some scientific or literary work already performed;

(c) of upright character, such as a testimonial from some instructor.

The value of each Fellowship is five hundred dollars. Payments will be based on the time during which the Fellow shall have been in residence. The holder of a Fellowship is exempt from the charges for tuition.

Every holder of a Fellowship will be expected to perform such duties as may be allotted to him in connection with his course of study, which course shall be such as to lead to the degree of Doctor of Philosophy. He will be expected to devote his time to the prosecution of special studies under the direction of the head of the department to which he belongs, and before the close of the academic year to give evidence of progress by the preparation of a thesis, the completion of a research, the delivery of a lecture, or by some other method. He must reside in New York or vicinity during the academic year.

No holder of a Fellowship shall be permitted to pursue a professional or technical course of study during his term. With the written approval of the President, but not otherwise, he may give instruction or assistance in any department of the University.

No Fellow will be allowed to accept remunerative employment except by written permission of the President, and the acceptance of any such employment, without such permission, shall operate to vacate the Fellowship.

A Fellow may be reappointed at the end of a year for reasons of weight. No Fellow may be reappointed for more than two terms of one year each.

As these Fellowships are awarded as honors, those who are disposed, for the benefit of others or for any other reason, to waive the pecuniary emolument, may do so, and still have their names retained on the list of Fellows.

School of Arts

The Alumni Association of Columbia College shall be entitled to have always, in the School of Arts, four students to be instructed free of charge.

**Alumni
Scholarships.**

Scholarships. The Society for Promoting Religion and Learning in the State of New York shall be entitled to have always in the School of Arts, two students in each class, to be instructed free of charge for tuition.

Faculty Scholarships. The members of the several Faculties shall be entitled to have their sons educated in the School of Arts free of charge.

Alumni Competitive Scholarship. There shall be offered annually, as a prize to the student passing the best entrance examination in the School of Arts, a free scholarship for the course of four years. Such scholarship shall be known as the "Alumni Competitive Scholarship," and the Faculty shall have power to fix the conditions under which such scholarship shall be awarded.

Moffat Scholarships. The personal representatives of the late William B. Moffat, M.D., and their assigns shall be entitled to nominate and have always two students in the School of Arts, to be instructed free of charge; and such scholarships shall be known as the "Moffat Scholarships."

Schermerhorn Scholarships. The nearest living male relative of the late John Jones Schermerhorn shall be entitled to nominate and have always five students in the School of Arts to be instructed free of charge; and such scholarships shall be known as the "Schermerhorn Scholarships."

Theological Seminary Scholarship. The scholarship in the General Theological Seminary of the Protestant Episcopal Church (heretofore placed at the disposal of the Trustees of Columbia College by the Society for Promoting Religion and Learning in the State of New York) shall be awarded upon the following conditions, to wit:

a. All candidates shall comply with the requirements for admission of the General Theological Seminary, and as candidates for the ministry of the Protestant Episcopal Church, and must have taken the degree of Bachelor of Arts and have been graduated with honors.

b. All candidates shall report themselves to the Education Committee of such Society at least three months previous to the examination to be held by the Faculty for the purpose of awarding such scholarship.

Prize of the Alumni Association. A prize of fifty dollars in money or its equivalent, at the option of the receiver, established by the Association of the Alumni of Columbia College, was first awarded at the commencement in June, 1858.

It is to be given "to the most faithful and deserving student of the graduating class."

Three names are selected by the Faculty and submitted to the class, who from these three designate one to receive the prize. Should the class at any time fail to make the selection, and give notice thereof to the President of the college at least ten days prior to the day appointed for commencement, the selection of the student to receive the prize may be made by the Faculty.

Two Annual Seminary Prizes. *Two Annual Seminary Prizes were founded in November, 1851, by the Rev. Dr. John McVickar, through the Society for Promoting Religion and Learning, and for which an endowment of \$1000 is provided on the following conditions:

1. The first, to be entitled The Society's Greek Seminary Prize of Thirty Dollars, to be annually competed for among such members of the graduating class as shall have given in their names to the President, at least one month previous to such competition, as candidates for the General Theological

Seminary of the Protestant Episcopal Church, each student giving in his name as competitor to designate the prize for which he contends, and to be confined to the choice then made. The examination for such prize to be held publicly in the chapel, and separate from the general examination. To be on :

a. The Epistles of the New Testament (in Greek) “*ad aperturam libri.*”

b. On some one of the early Greek Fathers, to be designated at the time of noticing the prize, or, if none be designated, then upon some portion of Chrysostom or Athanasius, at the choice of the student.

The decision to be with the President and the Professor of Greek.

2. The second, to be entitled The Society's English Seminary Prize of Twenty Dollars, to be annually competed for as before, and to consist in the production of an essay (to be publicly read or not, as the President may determine), of the ordinary length of a pulpit discourse, on some subject connected with the course of evidences on which the class has been engaged ; such subject to be selected by the professor of the evidences, and given out by him at the time of notice ; and the prize to be adjudged as before, by the President and the professor of that branch ; such decision to have respect to—

a. The general ability and soundness of the essay ;

b. Its logical and demonstrative form ; and

c. The pure Saxon style and idiom in which it is written.

The names of the successful candidates to be enrolled in a suitable book to be provided for that purpose, lettered appropriately, and kept on the library table ; to be announced with other honors on commencement day, and also recorded honorably in the Society's books.

In 1887, Mr. J. Winthrop Chanler, an alumnus of the college of the class of 1847, bequeathed “to the Trustees of Columbia College in the City of New York, the sum of one thousand dollars, to be invested and kept invested, and the income thereof to be given annually, on the commencement day, to the undergraduate member of the senior class of said College who shall be the author of the best original manuscript essay in English prose on the history of civil government of America, or some other historical subject, the same to be determined by the judgment and decision of the Faculty of said College.” The bequest became available in 1879. Chanler Historical Prize.

The subject for the prize will be announced on or before November 1 of each year, and the competitive essays must be handed to the President on or before May 1 of the year following.

School of Law

There have been established three prize lectureships of \$500 each, annually, which continue for three years. Prize Lectureships.

A prize lectureship may be awarded, annually, at the close of each academic year to that member of the graduating class who, having pursued the full course of study, shall be designated by the Faculty as entitled thereto on the ground of general merit and proficiency during the entire course, taking into account the final examination.

Three prizes of two hundred and fifty dollars (\$250), one hundred and fifty (\$150), and one hundred dollars (\$100), respectively, are awarded to members Money Prizes.

of the graduating class, at the close of each academic year, for the best essays upon one or more legal topics. The competition for such prizes is open only to students who have pursued the whole course of study required for the degree of Bachelor of Laws, and who shall be certified by the Faculty to have been diligent in attendance and to have maintained a high degree of Scholarship throughout.

Prizes to the amount of one hundred and fifty dollars (\$150), founded by Robert N. Toppan, Esq., are awarded in Constitutional Law. A regular attendance upon the Law School for the first two years is a pre-requisite to competition.

College of Physicians and Surgeons

Fellowships of the Alumni Association.

In June, 1891, the Trustees, at the request of the Alumni Association of the College of Physicians and Surgeons, established three fellowships to be known as the Fellowships of the Alumni Association of the College of Physicians and Surgeons, the provision for which is made annually by the Association.

These fellowships are open to graduates of the College of Physicians and Surgeons who have shown special aptitude for scientific research in the departments of anatomy, physiology, or pathology. They are held for a period of two years and have an annual value of five hundred dollars each. The appointments to these fellowships are made by the executive committee of the Alumni Association from candidates presented to them by the professor of anatomy, the professor of physiology, and the professor of pathology.

The persons appointed to these fellowships are expected to devote themselves to scientific research in the department which they may elect, in this country, either in the schools of Columbia College, where they enjoy free tuition and the privileges of the laboratories, or in other institutions at their own expense. At the end of two years the holders of these fellowships are expected to present to the Association a thesis containing evidence of independent or original work in their special department. The next appointments to these fellowships will be made in May, 1894.

Alonzo Clark Scholarship.

By the will of the late Alonzo Clark, M.D., LL.D., for many years president of the College of Physicians and Surgeons, and professor of pathology and practical medicine, it has been placed in the power of the Medical Faculty to bestow a scholarship, with an income of about nine hundred dollars a year, for the purpose of promoting the discovery of new facts in medical science.

This has been bestowed for a period of three years, beginning October 1, 1891, upon Ira Van Geison, M.D., of New York City.

Harsen Prizes for Clinical Reports.

Three annual prizes, founded in 1859, by the late Jacob Harsen, M.D., a graduate of the College of Physicians and Surgeons, are offered for the three best reports, in writing, by students of the Medical Department, of the clinical instruction given at the New York Hospital during any four consecutive months of the year which ends on commencement day.

These reports must embrace the clinical teaching of both the visiting physician and the visiting surgeon on duty.

The prizes are as follows :

A First Prize of one hundred and fifty dollars ; a Second Prize of seventy-five dollars ; a Third Prize of twenty-five dollars.

A " Harsen Prize Medal " and a diploma are given with each prize.

In consequence of the great increase in value of the Harsen Prize Fund, in addition to the three prizes above mentioned, there are awarded three Harsen prizes for proficiency at examination, viz.:

Harsen
Prizes for
Proficiency at
Examination.

A First Prize of five hundred dollars; a Second Prize of three hundred dollars; a Third Prize of two hundred dollars.

The award of these prizes is made as follows :

The ten members of each graduating class who, at their examination for the degree of Doctor in Medicine, have shown the highest proficiency in all the branches combined, receive each a diploma of "Examination Honors," and are entitled to take part in special competitive examinations, the three most meritorious competitors at which receive the first, second, and third prizes, respectively.

The competitive examinations consist :

I. Of an examination in writing, covering *all the branches* of medical teaching.

II. Of an examination upon the cadaver in *practical anatomy*, conducted by the professor of anatomy.

III. Of practical examinations in *clinical medicine* and *clinical surgery*, conducted at the hospitals by the professors of medicine and surgery, respectively.

The relative merits of the competitors are decided, and the award of the prizes made, by a committee of three judges, consisting of the president of the College of Physicians and Surgeons, the president of the Association of the Alumni of the same, and a resident alumnus selected by them.

The Alumni Association Prize is a biennial prize of five hundred dollars open for competition to the alumni of the College of Physicians and Surgeons. It is awarded for the best medical essay submitted upon any subject the writer may select, and is open to competition in alternate years with the Cartwright prize.

Alumni
Association
Prize.

If no one of the competing essays be deemed sufficiently meritorious, the prize is not awarded.

An essay in order to be held worthy of the prize, must contain the result of original investigations made by the writer.

This prize is not awarded to any essay which is the work of more than one author, or which is at the same time submitted for another prize. Each competitor is required to send with his essay to the Prize Committee a statement that these requirements have been complied with.

Essays in competition for the prize to be awarded at commencement, 1894, must be sent to the secretary of the Alumni Association of the College of Physicians and Surgeons on or before April 1, 1894.

Competing essays must each be marked with a device or motto, and accompanied by a sealed envelope, similarly marked, containing the name and address of the author.

The Cartwright Prize consists of *five hundred dollars*, and is offered for competition in alternate years with the Alumni Association prize.

Cartwright
Prize of the
Alumni As-
sociation.

It is awarded on the same terms as the latter, *except that it is open to universal competition.*

Stevens Triennial Prize.

The Stevens Triennial Prize was established by the late Alexander Hodgdon Stevens, M.D., formerly president of the Medical School, on the following plan :

The prize, awarded triennially, consists of the interest yielded by the principal fund during three years, and amounts to *two hundred dollars*.

The administration of the prize is entrusted to a commission, consisting of the Dean of the Medical Faculty (*ex-officio*), the president of the Alumni Association of the College of Physicians and Surgeons (*ex-officio*), and the professor of physiology (*ex-officio*) in the same institution.

The prize is awarded to no essay unless it is sufficiently meritorious and includes the results of original research by the writer upon the subject chosen.

In 1894 this prize will be given to the *best medical essays* submitted, upon any subject the writer may select.

The competing essays must be sent in to the Dean of the College of Physicians and Surgeons, New York, on or before the first day of January, 1894. Each essay must be designated by a device or motto, and must be accompanied by a sealed envelope, bearing the same device or motto, and containing the name and address of the author. The envelope belonging to the successful essay will be opened, and the name of the author announced, at the annual Commencement of the College in 1894 ; at which time, also, the subjects for the next triennial prize (1897) will be announced.

The prize is open for universal competition.

Joseph Mather Smith Prize.

The fund for the Joseph Mather Smith prize was given by the relatives, friends, and pupils of the late Dr. Smith, as a memorial of his services as professor in the College of Physicians and Surgeons from 1826 to 1866. Under the provisions of the trust, an annual prize of *one hundred dollars* is awarded for the best essay (if sufficiently meritorious) on the subject of the year, presented by an alumnus of the College of Physicians and Surgeons. The prize committee, consisting of the Dean of the Medical Faculty, the professor of the practice of medicine, and the President of the Alumni Association of the College of Physicians and Surgeons, designate each year the subject for the following year. The competing essays should be sent to the Dean of the Medical Faculty on or before March 10th, each essay signed with a device or motto, and accompanied by a sealed envelope, inscribed with the same device or motto, and containing the name of the author. The envelope of the successful essayist will be opened, and the prize awarded at the annual commencement next following.

An essay in competition for the prize to be awarded in 1894 may be upon any subject relating to hygiene, pathology, or practical medicine.

School of Mines**Tyndall Fellowship.**

There shall be a Fellowship to be known as the " John Tyndall Fellowship for the encouragement of Research in Physics," which shall be held by some suitable person, who shall either be a graduate of or a student in the College, but not necessarily a candidate for a degree. Such Fellow shall be appointed by the Council upon the recommendation of the head of the Department of Physics. Such appointment shall always be for the term of one year only, but the Fellow, for the time being, shall be eligible for appointment from year to year, upon like recommendation. The Fellow so appointed shall be entitled to receive during his term of office the net income of the capital sum constituting

the endowment, to be paid in four quarterly installments on the usual quarter days, upon the certificate of the President ; and the Trustees guarantee that such net income will amount to at least six hundred and forty-eight dollars a year, being six per cent. upon ten thousand eight hundred dollars, the fund presented to the College by Professor Tyndall.

There shall be a Fellowship to be known as the "Barnard Fellowship for Encouraging Scientific Research," which shall be held by a graduate of the School of Arts or School of Mines who has evinced decided aptness for physical investigation and who may be disposed to devote himself to such investigation for some years continuously. Such Fellow shall be appointed by the Council upon the joint recommendation of the Faculties of the Schools of Arts and Mines. Such appointment shall be for the term of one year only, but the Fellow, for the time being, shall be eligible to reappointment from year to year upon like joint recommendation. The Fellow so appointed shall be entitled to receive during his term of office the net income of the capital sum constituting the endowment, to be paid to him in four equal quarterly installments on the usual quarter days, upon the certificate of the President.

**Barnard
Fellowship.**

It shall be the duty of a Barnard or John Tyndall Fellow to devote himself faithfully to the investigation of some subject in physical science at this College, or at some other in this country or abroad, under the supervision of some known physicist approved by the President and the head of the Department of Physics. He shall make a report quarterly to the President, giving an account of the work in which he has been engaged during the three months preceding : which report shall be certified by the physicist superintending and directing him. In case of failure faithfully to fulfil the obligations imposed upon him, such Fellow shall forfeit all privileges and emoluments conferred upon him by his appointment to the Fellowship, and the Council may at any time declare the Fellowship to be vacant.

**Duties of
Tyndall and
Barnard
Fellows.**

There shall be a Fellowship to be known as the "Columbia Fellowship in Architecture," which shall be open to all graduates of the Department of Architecture less than thirty years of age, and shall be awarded under such rules and regulations as shall from time to time be determined by the President and the Professor of Architecture. Holders of such Fellowship shall devote the income thereof to foreign study and travel in accordance with plans prepared by themselves and approved by the President and such Professor, and shall upon return present a written report and exhibit drawings in the Department of Architecture. Said Fellowship shall be awarded in the spring of every even-numbered year, and payments thereof shall be made by the Treasurer on the certificate of the Professor of Architecture, endorsed by the President, in four equal installments of three hundred and twenty-five dollars each on the usual quarter days.

**Columbia
Fellowship.**

There shall be two Fellowships to be known as the "McKim Fellowships in Architecture," which shall be awarded upon like conditions and for like purposes as are specified in the foregoing section, but such Fellowships shall be awarded in the spring of every uneven-numbered year, and payments thereof shall be made by the Treasurer, on the certificate of the Professor of Architecture, endorsed by the President, in four equal installments of two hundred and fifty dollars each on the usual quarter days.

**McKim
Fellowships.**

School of Political Science

Seligman Fellowships.

There shall be four Fellowships to be known as the "Seligman Fellowships," each of the value of two hundred and fifty dollars a year. Such Fellows shall be appointed by the Council upon the recommendation of the Faculty of Political Science. One or more additional Fellows may be appointed upon the same conditions, where there is a sufficient unexpended balance of the fund, provided by Mr. Jesse Seligman for the endowment of such Fellowships, to provide for such additional appointments. The sum due each of such Fellows shall be paid upon the certificate of the President that he has received in printed form and accepted a thesis for the degree of Doctor of Philosophy.

Prize in Political Economy.

An annual prize of one hundred and fifty dollars for the best essay on some subject in political economy has been established by Mr. Edwin R. A. Seligman, of the class of 1879. Competition for the prize is open to all members of the School of Political Science. The topic selected must be approved by the Faculty, and the essay itself must not be less than twenty thousand words in length.

Prize Lectureships.

The Trustees have established in the School of Political Science three prize lectureships of the annual value of five hundred dollars each, tenable for three years. The power of appointment is vested in the Faculty. One of these three lectureships becomes vacant at the close of each academic year. The previous holder may be reappointed. The conditions of competition are as follows:

1 The candidate must be a graduate of Columbia College in the School of Political Science or the School of Law. In the latter case he must have pursued the curriculum of the School of Political Science for at least two years.

2 He must be an active member of the Academy of Political Science.

3 He must have read at least one paper before the Academy of Political Science during the year next preceding the appointment.

The duty of the lecturer is to deliver annually, before the students of political science, a series of at least twenty lectures, the result of original investigation.

Fellowship Regulations

No Fellow shall be allowed to accept remunerative employment except by permission of the President, and the acceptance of any such employment, without such permission, shall operate to vacate the Fellowship.

All Fellows, except as hereinbefore provided, shall be required to pursue their studies during the term of their Fellowship at the College, unless permission be granted them by the President to study elsewhere.

All Fellows shall be governed by such rules and regulations, not inconsistent with the Statutes, as may be prescribed by the Council.

Free and Reduced Tuition

For information in regard to free and reduced tuition see page 300.

Barnard Medal

A gold medal, to be known as the "Barnard Medal for Meritorious Service to Science," shall be awarded at Commencement at the close of every

quinquennial period dating from the 17th day of July, 1889, to such person, if any, whether a citizen of the United States or of any other country, as shall within the five years next preceding have made such discovery in physical or astronomical science, or such novel application of science to purposes beneficial to the human race, as in the judgment of the National Academy of Sciences of the United States shall be esteemed most worthy of such honor.

Loubat Prize

Mr. Joseph F. Loubat has established, at Columbia College, two prizes, a first prize of \$1000, and a second of \$400, for the best works published in the English language upon the history, geography, archæology, ethnology, philology, or numismatics of North America. The competition for these prizes is open, under the deed of gift, to all persons, whether connected with Columbia College or not, and whether citizens of the United States or of any other country. No works will be considered save such as rest upon original research and constitute a distinct contribution to science. In order to ensure consideration of their works, authors are invited to send copies to the President of Columbia College, not later than June 1st of the year in which the prize is to be awarded; but the competition will not be restricted to works thus submitted. Copies of the regulations adopted by the Trustees can be obtained from the President's Secretary.

Mr. Loubat has provided a permanent endowment for these prizes, which will make it possible to award them at least every five years. Beginning with the competition of 1898, it has been decided to divide the above list of subjects into two groups, in which the award will be made alternately. These groups will consist, respectively, of history, geography, and numismatics; and of archæology, ethnology, and philology. It has also been decided that, after the present year, Mr. Loubat's foundation shall be employed to stimulate research and not simply to reward the authors of meritorious works published without reference to these prizes. Early in 1894 the group of subjects selected for the competition of 1898 will be made known, and a number of topics will be announced to which the competition will be primarily restricted. That is, the College will call for the investigation of certain questions and the publication of the results, and the best works produced in answer to this call, if of sufficient value, will receive the prizes. But if no works upon the topics suggested seem worthy of an award, the prizes will be adjudged to the best works falling within the general group of subjects designated for the period.

It is hoped that Mr. Loubat's generous foundation will serve to encourage American research in a field that is peculiarly our own, but in which much of the best work has hitherto been done by strangers.

PRIVILEGES OPEN TO COLUMBIA STUDENTS IN OTHER INSTITUTIONS.

The American Museum of Natural History places its collections at the service of advanced students of Columbia College for the purposes of study and research and provides them with the necessary facilities for work.

The Metropolitan Museum of Art admits students of Columbia College to the Museum on presentation of their matriculation cards, and gives them permission to draw, sketch, or copy objects in the Museum; the curator of the department in which the student desires to work furnishing him with cards for the work.

Objects may be removed temporarily from exhibition for the purpose of special study, and students are allowed to study these objects in rooms specified for the purpose.

The Union Theological Seminary admits, without fee, such students of high standing in the Senior year and graduate department of Columbia College, as may be recommended by the President, to such lectures in the regular courses of the Seminary as may be agreed upon by the Faculty of the Seminary and the President of Columbia College, and, also, any students of high standing in the graduate department of Columbia College, recommended by the President, to any optional or special classes, subject to the approval of the Faculty of the Seminary.

The privileges of the library of the Seminary, for reference, are open to all students of Columbia College, on recommendation of the President. Reciprocal advantages are offered by Columbia to students of the Seminary.

The courses of instruction and the library of the Teachers College, subject to the regulations of the institution are open, without fee, to all matriculated students of Columbia College (see *Philosophy and Education*, page 94).

BARNARD COLLEGE

Barnard College, incorporated in 1889 by the Regents of the University of the State of New York, is a college for women, in close affiliation with Columbia College. It is an independent corporation. At Barnard College the curriculum is the same as at Columbia College, and Columbia makes itself responsible for its standards by conducting all the examinations. These are identical, so far as possible, with those of Columbia. The instruction at Barnard is given for the most part by Columbia instructors, and, when this is impossible, by persons appointed with the approval of the President of Columbia College. Degrees are given to the graduates of Barnard College by Columbia College. Through Barnard College, women, properly qualified, can obtain the Columbia degrees of A.B., A.M., and Ph.D. In the three lower years of the course the instruction is entirely separate. In the Senior and graduate years certain courses at Columbia are open to the students of Barnard.

For all information concerning Barnard College, address the Registrar of Barnard College, 343 Madison Avenue.

PUBLIC WORSHIP

Prayers are read in the College Chapel every week-day morning, except Saturday, at 9.10 o'clock, with the reading of the Scriptures and singing, and an address by the chaplain, and all the officers and students of the College are invited to be present.

DEGREES CONFERRED AT COMMENCEMENT JUNE, 1893

Degree of Bachelor of Arts

- | | |
|---------------------------------|-------------------------------------|
| 1. Henry Watterson Bainton | 32. Casper Levias |
| 2. Acton Civill Bassett | 33. Edward Peale MacMullen |
| 3. William Henry Bowden | 34. Leonard Beecher McWhood |
| 4. Henry Charles Bernheim | 35. Walter Taylor Marvin |
| 5. Max Jacob Bernheim | 36. Walter Herbert Merrall |
| 6. Abraham Bijur | 37. George Lawrence Myers |
| 7. Joseph Bijur | 38. Walter Scott Newhouse |
| 8. Middleton Smith Borland | 39. George N. Olcott |
| 9. Charles Chisholm Brainerd | 40. Thomas Pollock Peters |
| 10. William Ross Brinckerhoff | 41. Hamilton Bancker Phelps |
| 11. Elias Galley Brown, Jr. | 42. Charles Louis Pollard |
| 12. John Francis Carew | 43. John Lovett Rile, Jr. |
| 13. Sidney Bernhard Cohn | 44. Fielding Tecumseh Robeson |
| 14. Peter Grant Cornell | 45. Edward Grundy Rotter |
| 15. Henry Edward Crampton, Jr. | 46. Sanford Louis Rotter |
| 16. William Ballou Donnell | 47. William Robert Shepherd |
| 17. Appleton Grannis | 48. Louis Victor Southack |
| 18. Roland Palmer Gray | 49. Arnon Lyon Squiers |
| 19. Chauncey Boyd Griffiths | 50. Andrew Varick Stout |
| 20. Willett Nicoll Hawkins, Jr. | 51. Starr Taintor |
| 21. George Charles Hayes | 52. Samuel George Fitzhugh Townsend |
| 22. William Addison Hervey | 53. Sidney Hubbell Treat |
| 23. Herbert Müller Hopkins | 54. Frederic Edgar Underhill |
| 24. Judah Joffe | 55. Herbert Treadwell Wade |
| 25. Frederick Kaufman | 56. Dana Clemmer Wells |
| 26. Stephen Henry Keating | 57. William Edward West |
| 27. Harvey Roberts Kingsley | 58. Frederic Newton Whitehorne |
| 28. Arthur Charles Klettsch | 59. William Peck Whyland |
| 29. Wilfrid Lay | 60. Fred Templeton Zabriskie |
| 30. Leffert Lefferts | 61. August Zinsser, Jr. |
| 31. Louis Lesinsky | |

FROM BARNARD COLLEGE

- | | |
|----------------------------|---------------------------|
| 1. Lulu Grace Farrant | 5. Alice Kohn |
| 2. Jessie Boyne Garretson | 6. Laura Grace Levy |
| 3. Alice Maplesden Keys | 7. Mary Stuart Pullman |
| 4. Clarita Mercedes Knight | 8. Louise Merritt Stabler |

Degree of Bachelor of Laws

- | | |
|----------------------------------------|--------------------------------|
| 1. Frank Adams Acer | 4. Frank Barker |
| 2. Arthur Aaron Alexander | 5. Herbert Seymour Barnes |
| 3. Alexander Hopkins Anderson,
A.B. | 6. Edwin Stanton Bayer, A.B. |
| | 7. William Mason Bennett, A.B. |

- | | |
|-------------------------------------------------|--------------------------------------------|
| 8. Adolph Bloch | 38. Irving I. Kempner |
| 9. William Bondy, A.M. | 39. William Klingenstein |
| 10. William Watts Bonson | 40. Max James Kohler, B.S., A.M. |
| 11. Frederick A. Busch | 41. William Ransford Loomis, A.B. |
| 12. William Chesebrough Cammann,
A.B. | 42. Victor King McElheny, Jr., A.B. |
| 13. Martin Berthold Cohn | 43. Thomas Patrick McKenna |
| 14. James Church Cropsey | 44. Gustavus Ewald Menzel |
| 15. Henry Brundage Culver | 45. Albert Ossar Miller, Jr. |
| 16. Robert George Dillenback | 46. Henry Richards Moore |
| 17. Read Gordon Dilworth, A.B. | 47. Emanuel Newman |
| 18. Edwin Duffey, A.B. | 48. William Crue Nicoll |
| 19. Frederick Smyth Duncan, A.B. | 49. Herbert Noble, A.B. |
| 20. Samuel Whitney Dunscomb, Jr.,
A.B., A.M. | 50. John Patterson |
| 21. Myer Edelman | 51. Alexander Pentlarge |
| 22. George Herbert Engelhard | 52. Leopold Bertram Pollak |
| 23. Alfred Epstein | 53. Charles Benton Power, A.B. |
| 24. Ira Joseph Ettinger | 54. Seth Banister Robinson, Ph.B.,
A.M. |
| 25. Joseph Paul Fallon, Jr. | 55. John Edward Roeser, B.S. |
| 26. Edward Foggin | 56. Clarence De Witt Rogers, B.S. |
| 27. George Homan Furman | 57. George Putnam Sanborn |
| 28. William Edwin Hailey | 58. Jacob Schauf |
| 29. William Herbert Hanford | 59. Alfred Frederick Seligsberg,
A.B. |
| 30. William Harrison, A.B. | 60. George W. Simpson |
| 31. Leon Hühner, A.B. | 61. Max David Steuer |
| 32. Ralph Wesley Hyatt | 62. Percy H. Stewart, A.B. |
| 33. Charles Huntington Jackson,
A.B. | 63. Charles Thaddeus Terry, A.B. |
| 34. Joseph S. Jaffa | 64. Walter Underhill |
| 35. John Newton Johnson | 65. Alexander Van Wagoner, A.B.,
A.M. |
| 36. Charles Conover Kalbfleisch, A.B. | 66. Arnold Charles Weil |
| 37. Thomas Kelby, B.S., A.M. | 67. James Augustus Wilson |

Degree of Doctor of Medicine

- | | |
|---------------------------------------------|------------------------------------|
| 1. Paul White Abell | 11. William Bushnell, Jr. |
| 2. Vanderpoel Adriance, A.B. | 12. James Green Carson |
| 3. Oran Purdy Andrews | 13. Amasa Day Chaffee, A.B. |
| 4. William Lucius Armstrong,
A.B., Ph.B. | 14. Howard Dennis Collins, A.B. |
| 5. William Seaman Bainbridge | 15. Lee Cooke |
| 6. Joseph De Vere Barber | 16. John Joseph Cronin, A.B. |
| 7. Herbert Luther Barker, Ph.B. | 17. George Van Ness Dearborn, B.L. |
| 8. Joseph Baum, B.S. | 18. Nelson Lloyd Deming, Ph.B. |
| 9. William Josiah Blalock, A.B. | 19. Walter Dodge, Ph.B. |
| 10. William John Bohlk | 20. Fernand Dorbessan |
| | 21. Jonathan Dwight, Jr., A.B. |

22. Charles Albert Elsberg, A.B.
23. Albert Franklin Fitch, Jr., B.S.
24. Simon Gabriel Frank
25. Joseph Edward Fuld
26. Joshua Brush Gesner, A.B.
27. Ralph Schuyler Goodwin, Jr., Ph.B.
28. William James Greanelle, B.S.
29. John De Lafayette Grissim
30. Frederick William Hagney, B.S.
31. John Taylor Halsey
32. Varney Bernard Hamlin
33. Edward William Hanlon
34. Harry Theodore Harding
35. Horace Sedgwick Hart, A.B., Ph.B.
36. Roy Harlan Hawkes
37. William Van Valzah Hayes, Ph.B.
38. William Avery Hillard
39. Edward Sterling Hodgskin
40. Frederick Whitcomb Hornick
41. John Jacob Hubschmitt, Ph.G.
42. Max Hühner
43. Harry Hutchinson, A.B.
44. Albert Martin Judd
45. Arthur Matthew Kane, A.M.
46. Edwin Mathews Kitchel
47. Ferdinand Austin Kittinger
48. Louis Theodore Klinker
49. Albert Franz Gottfried Kuehn, Ph.G.
50. James Ralston Lattimore
51. A. Lincoln Leatherman
52. Alfredo Lizano-y-Ulloa, A.B.
53. Henry Christian Lovis, Ph.G.
54. Herbert Boyd Masten
55. Francis Stuart Mathews, B.S.
56. Henry Smith Mathewson, A.B.
57. Giovanni Merenna
58. Frank Denton Merritt
59. Alfred Edward Meyer
60. David Falkner Monash
61. Francis Patterson Morgan, A.B.
62. John Donaldson Murray
63. Selian Neuhoof, B.S.
64. Carl Osterheld
65. Frank Overton, A.B.
66. Samuel Barfield Palmer, A.B.
67. Ransom Joseph Parker
68. Samuel Grey Courtney Pinckney
69. Albert Pittis
70. Charles Clary Rathbone
71. Addison Raynor
72. Joseph Manuel Rector, A.B.
73. John Selden Richardson, A.M.
74. Bernard Samuel Roseneau, A.B.
75. Frederick Fuller Russell
76. Benjamin Jerome Sands, A.B.
77. Henry William Schlesinger, A.B.
78. Isaac Poitevent Sessions
79. Arthur Melville Shradly, A.B.
80. Louis Percy Smith
81. Langdon Trufant Snipe, A.B.
82. Bernard Sour
83. Thomas Bray Spence, A.B.
84. William Barclay Stephens, A.M.
85. Forney Caldwell Stevenson
86. George David Stevenson
87. Frank Crombie Studley, B.S.
88. Benjamin Torrens
89. Paul Haddock Tracy
90. Harvey Clinton Upchurch, A.B.
91. Jefferson Brockner Van Tine
92. Cornelius Doremus Van Wageningen, A.B.
93. James Ditmars Vorhees, A.B.
94. Arthur Seymour Vosburgh, A.B.
95. George Washington Vreeland
96. Charles Howard Walker, A.B.
97. Bertram Howard Waters, A.B.
98. Robert Watts, Jr., A.B.
99. Calvin B. West
100. Arthur Charles Wheeler
101. Rufus Baldwin Whitehead
102. Joseph Wiener, A.B.
103. Julius Wolff, A.B.
104. Sidney Yankauer, A.B.

Degree of Engineer of Mines

- | | |
|--------------------------|----------------------------|
| 1. Harry Garner Haskell | 5. William Arthur Pomeroy |
| 2. John Elmer Jones | 6. George Austin Schroter |
| 3. Edward Laurence Kurtz | 7. Samuel Clifton Thompson |
| 4. Henry Stewart McKee | 8. Henry Ashe Tilghman |

Degree of Civil Engineer

- | | |
|---------------------------------|----------------------------|
| 1. Ignacio Ernesto Agramonte | 7. Charles Rufus Harte |
| 2. George William Behrman | 8. Robert Hoyt |
| 3. George Hallett Clark | 9. Alfred Liebmann |
| 4. Reginald Guy Foster | 10. Alexy Joseph Malukoff |
| 5. Luther Elwood Gregory | 11. Arthur Dickson Prince |
| 6. Albert Worthington Hankinson | 12. Francis Adolphe Provot |

Degree of Electrical Engineer

- | | |
|----------------------------|-------------------------------------|
| 1. Milton Church Canfield | 2. Frederick Malling Pederson, B.S. |
| 3. Francis George Robinson | |

Degree of Bachelor of Philosophy

(Course of Geology and Palæontology)

William Diller Matthew, A.B.

Degree of Bachelor of Philosophy

(Course of Analytical and Applied Chemistry)

- | | |
|--------------------------|----------------------------|
| 1. Frederic Sackett Hyde | 2. Arthur Comings Langmuir |
|--------------------------|----------------------------|

Degree of Bachelor of Philosophy

(Course of Architecture)

- | | |
|--------------------------------|-----------------------------------|
| 1. Chester Holmes Aldrich | 7. Valentine Everit Macy |
| 2. William Clark Ayres | 8. Thomas Maria Newton |
| 3. Edward Raymond Bossange | 9. John Calvin Oakes, B.S. |
| 4. William Frederick Brooks | 10. Richard Bayley Post |
| 5. William Simpson Covell | 11. Marcus Tullius Reynolds, A.B. |
| 6. Frederick Thomas Hume, M.D. | 12. Henry Atterbury Smith |
| 13. William Tuttle. | |

Degree of Master of Arts

- | | |
|----------------------------------------|-------------------------------------|
| 1. George Louis Beer, A.B. | 10. Joseph Larocque, Jr., A.B. |
| 2. Edward Stelle Brownson, Jr., A.B. | 11. Parker Cairns McIlhiney, Ph.B. |
| 3. Ferdinand Ezra M. Bullowa, A.B. | 12. James Alexander McLean, A.B. |
| 4. Henry Jagoe Burchell, Jr., A.B. | 13. Harry Necarsulmer, B.S. |
| 5. Allison Emery Drake, A.B. | 14. Benjamin Risley Putnam, B.S. |
| 6. Rodney Lawrence Glisan, A.B., LL.B. | 15. James Dennison Rogers, A.B. |
| 7. Alexander Browne Halliday, A.B. | 16. Dwight Wilcox Taylor, A.B. |
| 8. Leon Hühner, A.B. | 17. Clarence Walton Vail, A.B. |
| 9. Sherman Skinner Jewett, Jr., A.B. | 18. Clark Greenwood Voorhees, Ph.B. |
| | 19. Francis Walker, B.S. |
| | 20. Seldon Lincoln Whitcomb, A.B. |

Degree of Doctor of Philosophy

- | | |
|---------------------------------------|----------------------------------------|
| 1. Cortlandt Field Bishop, A.M. | 8. Alfred Bernard Moldenke, A.B. |
| 2. Edwin Mortimer Blake, E.M. | 9. George Clinton Densmore Odell, A.M. |
| 3. William Bondy, A.M. | |
| 4. Joseph Albert Deghuée, Ph.B. | 10. William Zebina Ripley, B.S., A.M. |
| 5. Samuel Whitney Dunscomb, Jr., A.M. | 11. Victor Solomon J. Rosewater, A.M. |
| 6. Isaac A. Hourwich, A.M. | |
| 7. Thomas Arthur Humason, A.M. | 12. Max West, B.S., A.M. |

HONORARY DEGREE

Degree of Doctor of Laws

IRA REMSEN, PH.D.

Professor of Johns Hopkins University

University Fellows, 1893-4

George Hume Batchelor, A.B., Indiana University, 1892.	Subject, Finance
L. G. Bugbee, A.B., University of Texas, 1892.	" History
Henry Jagoe Burchell, Jr., A.B., Columbia College, 1892.	" Latin
Charles Ernest Chadsey, A.B., Leland Stanford, Junior, University, 1892.	" Finance and History
Herman Stearns Davis, A.B., Princeton, 1892.	" Astronomy.
Allison Emery Drake, A.B., St. Xavier College, Cincinnati, 1886.	" Anglo-Saxon
Henry Crosby Emery, A.B., Bowdoin College, 1892.	" Social Science
W. J. Hannah, A.B., University of Indiana, 1892.	" Social Science
Harwood Huntington, A.B., Trinity College, 1884.	" Chemistry
* Wilfrid Lay, Columbia College, 1893.	" Philosophy
Caspar Levias, Columbia College, 1893.	" Oriental Languages

* Appointed Oct. 17, 1893.

George H. Ling, University of Toronto, 1893.	Subject, Mathematics
James Alexander McLean, A.B., University College, Toronto, 1892.	" Comparative Jurisprudence
Albert Prescott Mathews, B.S., Massachusetts Institute of Tech- nology, 1892.	" Biology
William Diller Matthew, Columbia College, 1893.	" Geology
Robert Andrews Millikan, A.B., Oberlin College, 1891.	" Physics
Heinrich Ries, Ph.B., Columbia College, 1892.	" Mineralogy
James Dennison Rogers, A.B., Hamilton College, 1889.	" Greek
Stuart Henry Rowe, A.B., Yale College, 1890.	" Pedagogy
William Robert Shepherd, Columbia College, 1893.	" History
Arthur Beamen Simonds, A.B., Harvard University, 1891.	" Romance Languages
John Kunkel Small, A.B., Franklin and Marshall College, 1892.	" Botany
Francis Walker, B.S., Massachusetts Institute of Tech- nology, 1892.	" Economics
Seldon Lincoln Whitcomb, A.B., Iowa College, 1887.	" Literature
* Asa Wynkoop, A.B., Rutgers College, 1887.	" Philosophy

* Resigned Sept. 20, 1893.

ACADEMIC CALENDAR

- 1893—Oct. 2.—First term, 140th year begins, Monday.
 Nov. 7.—Election day, holiday.
 Nov. 30.—Thanksgiving day, Thursday, holiday.
 Dec. 25.—Christmas holidays begin, Monday.
- 1894—Jan. 6.—Christmas holidays end, Saturday.
 Jan. 29.—Mid-year examinations begin, Monday.
 Feb. 7.—Ash-Wednesday, holiday.
 Feb. 10.—First Term ends, Saturday.
 Feb. 12.—Second term begins, Monday.
 Feb. 22.—Washington's birthday, Thursday, holiday.
 March 23.—Good Friday, holiday.
 May 21.—Concluding examinations begin, Monday.
 May 30.—Memorial day, Wednesday, holiday.
 June 4.—Examinations for admission begin, Monday.
 June 13.—Commencement, Wednesday.
 Sept. 19.—Examinations for admission begin, Wednesday,
 Sept. 26.—Matriculation and registration begin, Wednesday.
 Oct. 1.—First term, 141st year, begins, Monday.
 Nov. 6.—Election day, holiday.
 Nov. 29.—Thanksgiving day, Thursday, holiday.
 Dec. 24.—Christmas holidays begin, Monday.
- 1895—Jan. 5.—Christmas Holidays end, Saturday.
 Jan. 28.—Mid-year examinations begin, Monday
 Feb. 9.—First term ends, Saturday.
 Feb. 11.—Second term begins, Monday.
 Feb. 22.—Washington's birthday, Friday, holiday.
 Feb. 27.—Ash-Wednesday, holiday.
 April 12.—Good Friday, holiday.
 May 20.—Concluding examinations begin, Monday.
 May 30.—Memorial day, Thursday, holiday.
 June 3.—Examinations for admission begin, Monday.
 June 12.—Commencement, Wednesday,
 Sept. 25.—Examinations for admission begin.
 Oct. 2.—Matriculation and registration begin, Wednesday,
 Oct. 7.—First term, 142d year begins, Monday.

